

Middlebury N.Y. Oct 27
A M E R I C A N

RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, *Editor.*

ASSISTANT EDITORS:

JAMES T. HODGE, *For Mining and Metallurgy.*

CHARLES T. JAMES, *For Manufactures and the Mechanic Arts.*

M. BUTT HEWSON, *For Civil Engineering.*

SATURDAY, AUGUST 3, 1850.

Second Quarto Series, Vol. VI., No. 31.---Whole No. 746, Vol. XXIII.

ESTABLISHED IN 1831.

NEW-YORK:

PUBLISHED WEEKLY, BY

JOHN H. SCHULTZ & CO.

Room 13, Third Floor,

No. 136 Nassau Street.

RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOL, Editor.

ASSISTANT EDITORS:
JAMES T. HOGUE, Jr., New York and Albany.
CHARLES T. JAMES, Jr., New York and the West.
W. BUTT HENSON, Jr., New York.

PUBLISHED WEEKLY, AT
No. 136 NASSAU STREET, NEW YORK.

Second Class Matter, Vol. 7, No. 21, 1884. Postage Paid at New York, N.Y.

ESTABLISHED IN 1842.

NEW-YORK:

PUBLISHED WEEKLY BY

JOHN H. SCHULTE & CO.

Successors of J. H. Schulte & Co.

No. 136 Nassau Street.

IRON BRIDGES, BRIDGE & ROOF BOLTS,
etc. STARKS & PRUYN, of Albany, New York,
having at great expense established a manufactory with
every facility of Machinery for Manufacturing Iron
Bridges, Bridge and Roof Bolts, together with all kinds
of the larger sizes of Screw Bolts, Iron Railings, Steam
Boilers, and every description of Wrought Iron Work,
are prepared to furnish to order, on the shortest notice,
any of the above branches, of the very best of American
Refined Iron, and at the lowest rates.

During the past year, S. & P. have furnished several
Iron Bridges for the Erie Canal, Albany Basin, etc.
—and a large amount of Railroad Bridge Bolts, all of
which have given the most perfect satisfaction.

They are permitted to refer to the following gentlemen:

Charles Cook,	Canal Commissioners
Nelson J. Beach,	of the
Jacob Hinds,	State of New York.
Willard Smith, Esq.,	Engineer of the Bridges for
Messrs. Stone & Harris,	the Albany Basin.
Mr. Wm. Howe,	Railroad Bridge Builders,
Mr. S. Whipple,	Springfield, Mass.
	Engineer & Bridge Builder,
	Utica, N. Y.

January 1, 1849.

TO RAILROAD COMPANIES AND BUILDERS OF MARINE AND LOCOMOTIVE ENGINES AND BOILERS.

FASCAL IRON WORKS.

WELDED WROUGHT IRON TUBES

From 4 inches to 48 in calibre and 2 to 12 feet long,
capable of sustaining pressure from 400 to 2500 lbs.
per square inch, with Stop Cocks, T. L., and
other fixtures to suit. Fitting together, with screw
joints, suitable for STEAM, WATER, GAS, and for
LOCOMOTIVE and other STEAM BOILER FLUES.



Manufactured and for sale by
MORRIS, TASKER & MORRIS.
Warehouse S. E. Corner of Third & Walnut Streets,
PHILADELPHIA.

To Railroad Companies, etc.



The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,
46 South 8th St., Philadelphia.
6m*

November 3, 1849.

Mattewan Machine Works.

THE Mattewan Company have added to their Machine Works an extensive LOCOMOTIVE ENGINE department, and are prepared to execute orders for Locomotive Engines of every size and pattern—also Tenders, Wheels, Axles, and other railroad machinery, to which they ask the attention of those who wish such articles, before they purchase elsewhere.

STATIONARY ENGINES, BOILERS, ETC.,
Of any required size or pattern, arranged for driving Cotton, Woollen, or other Mills, can be had on favorable terms, and at short notice.

COTTON AND WOOLLEN MACHINERY.
Of every description, embodying all the modern improvements, second in quality to none in this or any other country, made to order.

MILL GEARING,

Of every description, may be had at short notice, as this company has probably the most extensive assortment of patterns in this line, in any section of the country, and are constantly adding to them.

TOOLS.

Turning, Lathes, Slabbing, Planing, Cutting and Drilling Machines, of the most approved patterns, together with all other tools required in machine shops, may be had at the Mattewan Company's Shops, Fishkill Landing, or at 66 Beaver street, New York.

WM. B. LEONARD, Agent.

RAILROAD

India-rubber Springs.

IF any Railroad Company or other party desires it, the NEW ENGLAND CAR COMPANY will furnish India-rubber Car Springs made in the form of washers, with metallic plates interposed between the layers, or in any other form in which they can be made; in all cases guaranteeing the right to use the same against any and all other pretended rights or claims whatsoever.

F. M. Ray, 98 Broadway, New York.
E. CRANE, 99 State Street, Boston.
1849.

MACHINE WORKS OF ROGERS KETCHUM & GROSVENOR, Patterson, N. J. The undersigned receive orders for the following articles manufactured by them of the most superior description in every particular. Their works being extensive, and the number of hands employed being large, they are enabled to execute both large and small orders with promptness and dispatch.

Railroad Work.—Locomotive Steam Engines and Tenders; Driving and other Locomotive Wheels, Axles Springs and Flange Tires; Car Wheels of Cast Iron a variety of patterns and chills; Car Wheels of Cast Iron with wrought tires; Axles of best American refined iron; springs; boxes and bolts for cars.

Cotton, Wool and Flax Machinery of all descriptions and of the most improved patterns, style and workmanship.

Mill gearing and millwright work generally, hydraulic and other presses; press screws; callenders; lathes and tools of all kinds; iron and brass castings of all descriptions.

ROGERS, KETCHUM & GROSVENOR,
Patterson, N. J. or 74 Broadway, New York.

THE NEWCASTLE MANUFACTURING Co. continue to furnish at the Works, situated in the town of Newcastle, Del., Locomotive and other steam engines, Jack Screws, Wrought Iron Work and Brass and Iron Castings, of all kinds connected with Steamboats, Railroads, etc.; Mill Gearing of every description; Cast Wheels (chilled) of any pattern and size, with Axles fitted, also with wrought tires, Springs, Boxes and bolts for Cars; Driving and other wheels for Locomotives.

The works being on an extensive scale, all orders will be executed with promptness and despatch. Communications addressed to Mr. William H. Dobbs, Superintendent, will meet with immediate attention.

ANDREW C. GRAY,
President of the Newcastle Manuf. Co.

DEAN, PACKARD & MILLS,

MANUFACTURERS OF ALL KINDS OF

RAILROAD CARS,

SUCH AS

PASSENGER, FREIGHT AND CRANK CARS

— ALSO —

SNOW PLOUGHS AND ENGINE TENDERS OF VARIOUS KINDS.

CAR WHEELS and AXLES fitted and furnished at short notice; also, STEEL SPRINGS of various kinds; and

SHAFTING FOR FACTORIES.

The above may be had at order at our Car Factory

REUEL DEAN, }
ELIJAH PACKARD, } SPRINGFIELD, MASS.
ISAAC MILLS, } 1y48

Iron Safes.

FIRE and Thief-proof Iron Safes, for Merchants, Banks and Jewelers use. The subscriber manufactures and has constantly on hand, a large assortment of Iron Safes, of the most approved construction, which he offers at much lower rates than any other manufacturer. These Safes are made of the strongest materials, in the best manner, and warranted entirely fire proof and free from dampness. Western merchants and the public generally are invited to call and examine them at the store of E. Corning & Co., sole agents, John Townsend, Esq., or at the manufactory.

Each safe furnished with a thief-detector lock, of the best construction.

Other makers' Safes repaired, and new Keys and Locks furnished at the shortest notice.

H. W. COVERT
cor. Steuben and Water sts. Albany
August 24, 1849.

entirely fire proof and free from dampness.

Each safe furnished with a thief-detector lock, of the best construction.

Other makers' Safes repaired, and new Keys and Locks furnished at the shortest notice.

H. W. COVERT

cor. Steuben and Water sts. Albany

August 24, 1849.

PHILADELPHIA CAR MANUFACTORY,

CORNER SCHUYLKILL 2D AND HAMILTON STS.,
SPRING GARDEN, PHILADELPHIA CO., PA.

Kimball & Gorton,

Having recently constructed the above works, are prepared to construct at short notice all kinds of

RAILROAD CARS, Viz:

Passenger Cars of all classes—Open and Covered Freight and Express Cars—Coal Cars—Hand Cars & Trucks of all descriptions.

They are also prepared to furnish Chilled Wheels of any pattern. Car Wheels & Axles fitted and furnished. Snow Ploughs and Tenders made to order. Steel and other Springs always on hand.

All orders will be filled at short notice, and upon as good terms as at any other establishment in the country.

Omnibuses from the Exchange run within one square of the manufactory every 10 minutes during the day.

Philadelphia, June 16, 1849. 1y25

Patent Self-clinching Railroad Spikes.

These spikes have been in use upon various roads for several years, and have met with universal approval by Engineers. They drive in the manner shown, turning themselves, and are therefore not liable to work loose. They will prove of great value to secure the chair.

We are also manufacturing railroad spikes, hook and flat head; wrought chairs, clamps, etc., of superior quality, and are prepared to contract for any pattern or weight upon favorable terms.

SMITH & TYSON,
25 South Charles st., Baltimore Md.



P. H. Griffin,

Corner of Steuben and James Sts. Albany, N. Y.
CONTINUES to manufacture copper flues for locomotive boilers, brewers' coppers, stills, tanner heaters, etc. Copper work in general, at the shortest notice. He has constantly on hand brass cocks, brass valves, copper pumps of every variety.

Orders promptly attended to. 1y14

Patent India Rubber Steam Packing.

THIS article, made by the subscriber, who alone is authorized to make it, is warranted to stand as high a degree of heat as any that has been or can be made by any person—and is the article which has made the reputation of India Rubber Steam Packing and the demand therefor. A large assortment of all thicknesses requisite for any description of engines, steam pipes, valves, etc., constantly on hand and for sale by the manufacturer and patentee, who will give every information regarding its properties, mode of use, etc., at the warehouse.

JOHN GREACHEN, JR.,
98 Broadway, opposite Trinity Church.
New York, October, 1849.

Fire Brick.

THE Subscribers have constantly on hand Rufford's Stourbridge, Oak Farms Stourbridge, Lister, Worley, Red and White Welsh Fire Bricks, common and fancy shapes. Also,

ROOFING SLATES,

from the best Welch quarries, and of all sizes. Also

COAL,

of all kinds—Liverpool Orrell and Cannel, Scotch, New Castle, Pictou, Sidney, Cumberland, Virginia, and all kinds of Anthracite coals. Also,

Pig Iron, Salt, etc., for sale at the lowest market price. Apply to

SAMUEL THOMPSON & NEPHEW,
275 Pearl and 43 Gold Sts., New York.
November, 23, 1849.



NEW YORK IRON BRIDGE COMPANY.

The Bridges manufactured by this Company having been fully tested on different Railroads, by constant use for more than two years, and found to answer the full expectations of their most sanguine friends, are offered to the public with the utmost confidence as to their great utility over any other Bridge now known.

The plan of this Bridge is to use the iron so as to obtain its greatest longitudinal strength, and at the same time it is so arranged as to secure the combined principles of the Arch, Suspension and Triangle, all under such controlling power as causes each to act in the most perfect and secure manner, and at the same time impart its greatest strength to the whole work.

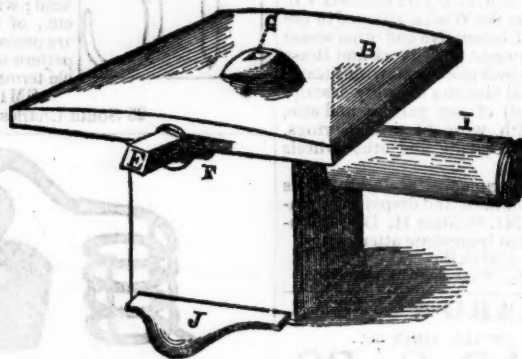
The New York Iron Bridge Company are prepared to furnish large quantities of Iron Bridging for Railroad or other purposes, at short notice, and at moderate prices.

Models, and pamphlets giving full descriptions of the above Bridge, with certificates based on actual trial from undoubted sources, will be found at the office of the Company, 39 Jauncey Court, Wall st., or of W. R. R. & BROTHERS, 19 Nassau Street, where terms of contract will be made known, and where orders are solicited.

August 29, 1849.

M. M. WHITE,
Agent for the Company.

E. Harris' Patent Rotary Blacksmith Tuyere.



LETTERS Patent were issued January 9, 1849, to E. HARRIS, of Springfield, for an Improved Rotary Blacksmith Tuyere. Since that time there have been some hundreds put in operation, giving satisfaction and full proof of superiority over all others.

This Tuyere is so arranged that by one movement it can be changed from the largest work to the smallest; at the same time the fire is changed in proportion, thereby making a great saving in coal. Words cannot convey the full merits of this Tuyere; nor is it deemed necessary to speak in disparagement of other Tuyeres, as every smith is capable of judging for himself, and will give merit where merit is due.

I will simply say that there has not been a single instance where I have had my Tuyere put in use but it has given full satisfaction, and is recommended by all who have used them, as being superior to any other ever introduced. I would invite all to give them a trial; and the names of those using them being given, I hope it may induce others to try them; they recommend themselves.

Western Railroad Shop,	Springfield, Mass.
" "	Pittsfield, "
Connecticut val. "	Springfield "
" "	N. Hampton "
Hartford "	Hartford, Conn.
New Haven "	New Haven "
Norwich and Worcester,	Norwich "
N. York and N. Haven,	New Haven "
Saratoga and Whitehall,	Saratoga, N. Y.
Vermont Central,	" "
Hudson and Berkshire,	Hudson, "
L. Kingsley,	Canton, Mass.

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.

August, 16, 1849.

6m33

Hadley Falls Co. Ireland,	W. Springfield, Mass.
Sidney Patch,	Boston, "
Ames Manuf. Cor.,	Chickopee, "
American Machine w'ks,	Springfield "
Dean, Packard & Mills	" "
G. Frank Bradley,	N. Haven, Conn.
Andrew Baird,	" "
Collis & Lawrence	" "
Slate & Brown,	Windsor Locks,
Gage,	Nashua, N. H.
Machine shop,	Manchester, "
Louis F. Lanney,	Baltimore, Md.
J. H. Baerdd,	179 Chambers st. N. Y.
J. Fanning,	Rochester, "
G. W. Hunt,	41 Gold st. "
Chamberlain & Waldo,	" "
P. S. Burges, carriage maker,	" "
Samuel Miller,	" "
J. Leggett,	Steverson falls, "
J. E. Harris,	Hillsdale, "
John L. Graham,	Albany, "
David Dalsell,	South Egremont, Mass.
Roys & Wilcock,	Berlin, Conn.

Agents for the sale of Tuyeres:
B. B. Stevens in New York and Connecticut.
A. J. VanAllen has the Agency for the Western and Southern States, and is now travelling through those States. Any communication addressed to the patentee will receive prompt attention.

E. HARRIS, Patentee,
Springfield, Mass.

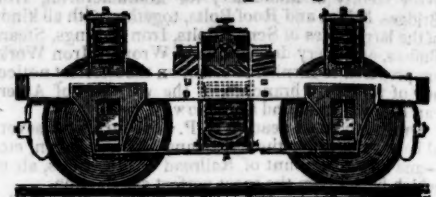
November 23, 1849.

Gas Fixtures.

FIXTURES for Burning Gas for Lighting Public Buildings, Private Dwellings, Stores and Factories, manufactured by the subscriber in great variety. Orders by Mail, or left at the Factory on Causeway street, will be promptly attended to.

HENRY N. HOOPER & CO.
Boston, March 23, 1850. 6m13

F. M. Ray's Patent India-rubber Car Springs.



India-rubber Springs for Railroad Cars were first introduced into use, about two years since, by the inventor. The New England Car Company, now possesses the exclusive right to use, and apply them for this purpose in the United States. It is the only concern that has tested their value by actual experiment, and in all arguments in favor of them, drawn from experience of their use, are in those cases where they have been furnished by this company. It has furnished every spring in use upon the Boston and Worcester road, and, in fact, it has furnished all the springs ever used in this country, with one or two exceptions, where they have been furnished in violation of the rights of this company; and those using them have been legally proceeded against for their use, as will invariably be done in every case of such violation.

The Spring formed by alternate layers of India-rubber discs and metal plates, which Mr. Fuller claims to be his invention, was invented by Mr. Ray in 1844. In proof of which we give the deposition of Osgood Bradley, of the firm of Bradley & Rice, of Worcester, Mass., car manufacturers, and men of the highest respectability. In this deposition, in relation to the right of parties to use these springs, he says:

"I have known Mr. Ray since 1835. In the last of May or the commencement of June, 1844, he was at my establishment, making draft of car trucks. He staid there until about the first of July, and left and went to New York. Was gone some 8 or 10 days, and returned to Worcester. He then on his return said he had a spring that would put iron and steel springs into the shade. Said he would show it to me in a day or two. He showed it to me some two or three days afterwards. It was a block of wood with a hole in it. In the hole he had three pieces of India-rubber, with iron washers between them, such as are used under the nuts of cars. Those were put on to a spindle running through them, which worked in the hole. The model now exhibited is similar to the one shown him by Ray. After the model had been put into a vice, witness said that he might as well make a spring of putty. Ray then said that he meant to use a different kind of rubber, and referred to the use of Goodyear's Metallic Rubber, and that a good spring would grow out of it." There are many other depositions to the same effect.

The history of the invention of these springs, together with these depositions, proving the priority of the invention of Mr. Ray, will be furnished to all interested at their office in New York.

This company is not confined to any particular form in the manufacture of their springs. They have applied them in various ways, and they warrant all they sell.

The above cut represents precisely the manner in which the springs were applied to the cars on the Boston and Worcester road, of which Mr. Hale, President of this road speaks, and to which Mr. Knevit refers in his advertisement. Mr. Hale immediately corrected his mistake in the article quoted by Mr. Knevit, as will be seen by the following from his paper of June 8, 1848. He says:

INDIA-RUBBER SPRINGS FOR RAILROAD CARS.—"In our paper yesterday, we called attention to what promises to be a very useful invention, consisting of the application of a manufacture of India-rubber to the construction of springs for railroad cars. Our object was to aid in making known to the public, what appeared to us the valuable properties of the invention, as they had been exhibited on trial, on one of the passenger cars of the Boston and Worcester railroad. As to the origin of the invention we had no particular knowledge, but we had been informed that it was the same which had been introduced in England, and which had been subsequently patented in this country; and, we were led to suppose that the manufacturers who have so successfully applied this material, in the case to which we referred had become possessed of the right to use that patent. It will be seen from the following communication, addressed to us by a member of the company, by which the Worcester railroad was supplied with the article upon which our remarks were based, that we were in an error, and that the springs here introduced are an American invention, as well as an American manufacture. How far the English invention may differ from it we have had no opportunity of judging."

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 136 NASSAU ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.

SECOND QUARTO SERIES, VOL. VI., No. 31.

SATURDAY, AUGUST 3, 1850.

[WHOLE No. 746, VOL. XXIII.]

ASSISTANT EDITORS,

J. T. HODGE, *For Mining and Metallurgy.*
GEN. CHAS. T. JAMES, *For Manufactures and the Mechanic Arts.*
M. BUTT HEWSON, C. E., *For Civil Engineering.*

PRINCIPAL CONTENTS.

Statistics of Iron Manufacture in Penn.....	481
Coal Trade of 1850.....	483
Documents relating the Manufacture of Iron in Pennsylvania.....	483
Life of Trevithick.....	485
Pen and Pocket Cutlery.....	486
Remington Bridge.....	487
Railroads in New York City.....	488
Eastern Railroad.....	488
Maine and Nova Scotia Railroad.....	488
Railroad Negotiations and Progress.....	489
Norwich and Worcester Railroad.....	489
Hackensack Railroad.....	489
New Mode of Propulsion.....	489
North Carolina Central Railroad.....	489
Pacific Railroad—Route across the Continent.....	489
Improvement in Marine Propulsion.....	489

American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & Co., 136 NASSAU ST.

Saturday, August 3, 1850.

Statistics of Iron Manufacture in Penn.

Below will be found the Appendix to the Report of the Committee on Statistics, appointed at the Iron Maker's Convention held in Philadelphia on the 7th of December, 1849. We invite to it particular attention as presenting a full view of the condition and prospects of the iron trade of that State. The statements there submitted to the public are a simple narration of facts from actual examination, upon which each person can make his own comments.

Since the adjournment of the Convention and the publication of the first report of the Committee on "Statistics and the State of the Trade," I have made a tour through the State, visiting in person, or obtaining authentic information from each of the Iron Works in the State. The facts thus collected are contained in a condensed form in the following fifteen tabular statements. The first eight of which comprise all the works in the State east of the Alleghany mountains, and the last seven those west of that mountain. The result shown by the tables may be briefly summed up as follows:

the total number of counties in the State is.....62
Of these the number now containing iron works is.....45

The number containing no iron works.....17
Of these 17 counties, however, 9 contain abundance of iron ore and coal, but owing to the absence of any cheap road to market, they yet remain untouched, leaving only 8 counties of 62 in the State not suited to the manufacture of iron.

Production of Iron from the Ore.—The following table shows the number of furnaces of each sort and of bloomeries in the State. The capital invested in land, buildings and machinery. Their present capacity. The actual make in 1847, 1849, and the probable make of 1850, respectively.

Totals	Blast furnaces using Anthracite coal..	No.	Investm't in capacity.	Present capacity.	Make 1847.	Make 1849.	Make 1850.
304	57	7	\$3,221,000	221,400	151,331	109,168	81,351
12,921,576	523,000	7	523,000	12,600	7,800	4,900	3,900
550,959	800,000	4	800,000	10,000	10,000	10,000	10,000
389,350	6,478,500	85	6,478,500	130,705	94,519	58,302	42,555
253,370	Charcoal hot blast	145	5,170,376	173,654	125,155	80,665	70,727
198,813	" cold "	6	28,700	600	545	335	280

Of the 298 furnaces in the State, 149, or exactly half, are in blast this year—and of this number about one-third are making no preparations to blow during next year.

The make of 1850 cannot exceed the amount above stated for this year, and will probably not equal it. It is estimated simply by deducting from the make of 1849 the amount produced by such furnaces as were at work last year and are now idle.

The estimate allows nothing for any diminution consequent on the further decline in the price of iron

which has taken place since the date of my visit, nor for stoppages and failures.

Fifteen furnaces were sold by the sheriff in the first four months of this year, and other sales under execution, will probably reduce the make below the amount above stated. A comparison of the make of 1850 with that of 1847 shows a decrease of 190,537 tons, or 49 per cent. in three years. If the present state of things continues, the make of 1851 will not exceed 100,000 tons.

Conversion of Cast into Wrought Iron.—The following table shows the number of forges and rolling mills in the State. The investment in lands, buildings and machinery. The total number of converting fires and their capacity per annum, and their make in 1847 and 1849.

Totals	Charcoal forges Rolling mills..	No. works.	Investm't.	No. forge fires.	No. of puddling fur.	Capa- city.	Actual make 1847.	Actual make 1849.
200	121	79	\$2,026,300	402	436	50,250*	39,997	28,495
\$7,580,500	5,554,200	402	5,554,200	436	436	174,400+	153,760	108,358
402	436	402	436	436	436	203,727	136,863	108,358

* 402 fires at 125 tons per fire per annum.
+ 436 furnaces at 400 tons per furnace per annum.

The make of 1849 shows a falling off from that of 1847 of 66,874 tons, or 33 per cent.

In Eastern Pennsylvania, the manufacture of all descriptions of iron that come in competition with the English is extinct. All the markets accessible from the sea or the lakes being entirely supplied with the foreign article.

A small amount of railroad iron is still made for the interior, but this branch of manufacture shows the following decline:

Present annual capacity of the State..64,400 tons.
Make 1847.....40,966
Make 1849.....18,973

Decrease in two years 21,993 tons, or 54 per cent.
The make of 1850 will show a still greater falling off—but it cannot be accurately estimated, as the mills run or stop as they succeed or fail in obtaining contracts for their iron. Of the six rail mills in the State, two are stopped entirely, and the remaining four are not averaging half time.

The other rolling mills now running are sustained almost entirely by the manufacture of boiler plates and cut nails, which are less seriously affected by foreign competition, though the prices and the demand have been much reduced by it. The English cannot make, at any price, boiler plates equal to our best charcoal plates, but they now furnish all the inferior ones, as well as all the flue and sheet iron now sold.

Cut nails are exclusively of American invention and manufacture, and they have never been imported.*

The total number of nail machines in the State is 606. The annual productions of each machine averages 1000 kegs of 100 lbs. each, making 606,000 kegs, or 30,300 tons a year. Of the product of the forges two thirds are sold in the form of blooms to the rolling mills, and are manufactured into boiler plates, horse shoe rods, and bars for the manufacture of sythes, axes, edge tools and cutlery, and other articles requiring a high polish. The remaining one third is sold in the form of hammered bar iron in competition with Swedish and Russian iron.

The Conversion of Iron into Steel.—The following is a list of all the works in the State engaged in the conversion of steel:

County.	Situation of Works.	Owners.	Amount annually converted, Tons.
Philadelphia,	Kensington,	Jas. Rowland & Co.	600
"	"	J. Robbins,	500
"	"	Earp & Brink,	100
"	"	Robt. S. Johnson,	100
"	"	W. & H. Rowland,	700
"	"	R. & G. D. Coleman,	400
"	"	R. W. & W. Coleman,	100
"	"	Singer, Hartman & Co.,	700
"	"	Coleman, Hallman & Co.,	800
"	"	Jones & Quigg,	1,200
"	"	Spang & Co.,	200
"	"	G. & J. H. Schenberger,	200
"	"	S. McKeivry,	178
Total tons.....			6,078

* These works have only been in operation six months: 44 tons of the above amount is cast steel.

The total number of iron works of all kinds in the State is 504. The capital invested in lands, buildings and machinery, \$20,502,076. The number of men employed, 30,103. Number of horses employed, 13,562.

The capital invested includes only such land and

* The price of cut nails has steadily declined in consequence of improvements in the method of manufacture and of domestic competition, from 6 cents per pound in 1839, to 3½ cents, the present rate. It cannot be reasonably doubted that a similar result must follow the permanent establishment of other branches of the iron manufacture, and hence the fallaciousness of those arguments against initial protection, which are founded upon the assumption of a perpetual tax upon consumers,

buildings as belong to the iron master, and such as are directly dependent on the iron works for their value.

Thus the value of farms, grist and saw mills, and similar property, horses, wagons, tools and the like, and the dwellings of workmen near large cities, are excluded, though belonging to the works, because they have an independent value.

The value of all coal land has been also excluded, both for the reason just given, and because it is the custom throughout the State, with but very few exceptions, to purchase coal delivered at the works. The capital, and men, and horses employed in mining and transporting this coal to the works, and in transporting the finished iron to market, have also been excluded from the above account, because sufficient data were not in my possession for more than a conjectural estimate.

More than one half of the anthracite furnaces, and a portion of the charcoal furnaces purchase their ore of the farmers in their vicinity, who dig it on their farms and haul it to the furnaces in the winter, and at other times when they are not more particularly occupied with their agricultural labors. There are other large and valuable ore banks in the State which belong to parties who work them and sell the ore to furnaces in their vicinity. The value of all these ore banks and the number of laborers employed at them, are excluded from the above account, which comprises only such real estate as belong to persons in the iron business, and is indispensably requisite to carry on such business—and the number of men and horses directly employed by them.

The number of men thus engaged, over and above those reported to me as in the pay of the iron manufacturers, may be very nearly approximated by reference to tables A and B, pages 89 and 91 in the communication of S. J. Reeves, Esq., on the elementary cost of making pig and bar iron. On the basis of these tables I have calculated the number of laborers not in the pay of the iron masters, but directly dependant on the iron works for support, to be 7,081 for the blast furnaces, and 4,432 for the rolling mills, forges, etc.: making together 11,513 to be added to the number above stated, or a grand total of 41,616 men dependant on the iron business in the State. Allowing five persons to each laborer, we have a population of 208,080 persons, or about one tenth of the entire population of the State dependant on the manufacture of iron.

The consumption of fuel in all the iron works of the State in 1847 was as follows:

Anthracite coal, 483,000 tons, at an average value of \$3 per ton.....\$1,449,000
Bituminous coal, 9,007,600 bushels, at 5. 450,380
Wood, 1,490,252 cords, at \$2*.....2,980,504
\$4,879,884

Both wood and coal are so abundant in the State that they have scarcely any value beyond the cost of the labor of getting them to market, and the amount sent to market is only limited by the demand. So that it cannot be said that to the owner of the wood or coal, it is a mere question as between buyers, for if the iron works stop, the demand and consequent production of fuel is curtailed proportionably. The wood has no value at all except for the iron works, as it is too bulky to bear transportation to any market; and in neighbor-

* This value is intended to include the cost of converting into charcoal [the form in which it is generally consumed] and delivering at the furnace. It would be equivalent to five cents a bushel as the average value of charcoal.

hoods where there are no iron works, from \$10 to \$15 per acre is paid to clear and burn it off the land.

Any one not familiar with the topography of the State would suppose that the enormous consumption of one and a half millions of cords of wood per annum would necessarily be of short continuance, owing to a failure of the supply. But it certainly does not exceed one fourth the ability of the State to furnish annually, for ever. The Alleghany mountains divided into six or seven parallel ranges cross the State diagonally from northeast to southwest. The higher portions of which ranges are too stony and steep for cultivation, but support a luxuriant growth of timber, which if cut down reproduces itself of sufficient size for the purpose of iron making, once in twenty years. Much the larger portion of these ranges has not yet been cut over the first time.

The following statement of the iron works now running, or in running order, shows the number of each kind built in each period of 10 years previous to 1840, and in each year since that date. Also the number of failures in each of the last ten years:

	Blast fur.		Charcoal.		Bloomeries and forges and roll. mills.		Total of all kinds.	
	Min-eral coal.	Charcoal.	Built	S. F.*	Built	S. F.*	Built	S. F.*
	Built	S. F.*	Built	S. F.*	Built	S. F.*	Built	S. F.*
Ten years ending								
January 1st.....	1730	1	1	1	1	1	1	1
1740	1	1	1	1	1	1	1	1
1750	1	1	1	1	1	1	1	1
1760	1	1	1	1	1	1	1	1
1770	1	1	1	1	1	1	1	1
1780	1	1	1	1	1	1	1	1
1790	1	1	1	1	1	1	1	1
1800	1	1	1	1	1	1	1	1
1810	1	1	1	1	1	1	1	1
1820	1	1	1	1	1	1	1	1
1830	1	1	1	1	1	1	1	1
1840	1	1	1	1	1	1	1	1
During the year..	1840	3	3	3	3	3	3	3
1841	1	1	1	1	1	1	1	1
1842	5	2	8	8	7	10	20	20
1843	1	1	5	4	2	2	7	7
1844	4	6	13	2	4	3	21	11
1845	14	15	2	11	1	40	3	3
1846	11	1	30	3	12	53	4	4
1847	8	1	12	15	5	8	25	24
1848	5	5	6	20	6	12	17	37
1849	3	5	2	30	5	6	10	41
Four months in...1850	3	15	4	7	7	22		
Now unfinished.....	5	1	1	6				
Totals	68	21	230	103	206	53	504	177

* Sold by sheriff or failed since January, 1840.

That portion of the preceding table which relates to the period prior to 1840 is of historical interest only. It shows a very regular increase in the number of works. The course of affairs for the last ten years is very clearly indicated by the table.

The great impetus given to the business about the year 1840, may be attributed to the discovery two years before, of the value of anthracite coal for iron making purposes. The lower clauses of the compromise tariff act coming into operation in '42, and the passage of a new tariff act in that year together, produce the curious result of 20 new works built and 20 failures. The number of new works then steadily increases, and the number of failures as steadily decreases, until they stand in 1846—53 new works built to 4 failures. But in that year the tariff of 1842 was repealed, and the present ad valorem duty laid on the price of foreign iron, which was then excessively inflated by the railway fever

in England, and in the next year (1846) we have the number of new works and the number of failures again even, 25 to 24, as in 1842, but with this important difference, that in 1842 distress was decreasing, whereas the difficulties of 1847 were only the beginning of more serious troubles. This is shown by the regularly diminishing number of new works, and the as regularly increasing number of failures, until we have for 1849 the new works only 10 to 41 failures.

The result has been asserted to be entirely the effect of over trading, and to be in no respect attributable to the tariff of '46, but it will be seen by reference to the extract from Mr. Walker's report, on page 36, that at the very time when we were making the most iron, we were importing annually an average of 50,000 tons of pig and bar iron alone, exclusive of all chains, wrought iron, hardware, cutlery, steel, etc. A business cannot be said to be overdone, which is inadequate to the supply of the home market.

It may be well to note one other fact shown by the preceding statement. The year 1847 was that in which the largest amount of iron was produced, and also the first of the present series of disastrous years.

It is the custom with the manufacturers of charcoal iron to make their contracts in the winter for all the materials required during the year. The prices of these materials is governed by the selling price of iron at that time, but the greater part of a year elapses before the iron is made and brought to market.

By reference to page 37 it will be seen that the price of Scotch pig in Glasgow in

January, 1847, was.....	£3 13 4
January, 1848, it was.....	2 8 4
Decrease in price.....	£1 5 0
Freights in January, 1847, were..	12s. 6d.
" " 1848, were..	15s. 0d.

Difference..... 2 6

Add decrease in duty 30 per ct. ad valorem 7 6

Total decrease in price of iron in the U.S. £1 10 0

Or in dollars, \$7 33.

Makers of small capital having contracted for their materials at the high prices ruling in the beginning of the year, and being obliged to sell at the low ones prevailing toward the close of it, were reduced to bankruptcy.

It will be seen by reference to the statement that two thirds of the failures in the year were among the makers of charcoal pig iron.

Many other interesting deductions might be made from the tables, but the object of this brief introduction is only to point out a few of the more striking results. Leaving to abler hands a more careful analysis, they are respectfully submitted.

CHARLES E. SMITH,

Chairman Committee on Statistics.

Coal Trade.

The quantity sent by railroad this week is 12,401-15—by canal none.

The great freshet, by which the different avenues to market from the coal regions have sustained so much injury, has placed the trade in such a dilemma that our duty to the public calls for some statement with regard to its present situation and future prospects. Our candid impression is that the different coal regions cannot supply the demand for the balance of the season, and that coal must materially advance in price. We base our calculations on the following data, which those engaged in the trade can examine, and judge for themselves.

The extraordinary and ordinary increase required to supply the market this year, will be as follows—

Increase in the California trade—extra.....	100,000 Tons.
Increase caused by the low prices this year and the check in consumption in the early part of last year, by advance in prices—extra.....	50,000
The ordinary increase last year over the former year was 250,000 tons, at advanced prices a portion of the year—there is no reason that it should be less this year—therefore, say.....	250,000

Increase required for 1850..... 400,000

The coal market was barer of coal at the opening of spring navigation this year, than it has been for the last three years, and the overstock was less by at least 100,000 tons, leaving but a small supply in the market unconsumed—barely sufficient to supply the different points for consumption, until the spring supplies arrived, except, perhaps in Boston.

The quantity sent to market this year, from the Schuylkill and Lehigh regions, is as follows: The Delaware and Hudson canal company have made no publication of their shipments this year, and the general impression is, that from difficulties which have occurred in the navigation of their enlarged canal, the supply does not exceed, if it does not fall short of the supply to the same period last year.

	1849.	1850.
Schuylkill—railroad.....	603,115	636,646
canal.....	183,916	264,226
Lehigh.....	787,031	900,872
	316,975	409,578
	1,104,006	1,310,450
		1,104,006

Increase in the supply in 1850—tons. 206,444

All this increase will be more than absorbed, by the recent freshet, which will obstruct the trade for several weeks. The weekly shipments amount in the aggregate, from the three principal regions, to about 95,000 tons, which for three weeks would amount in the aggregate to 285,000 tons loss. The Susquehanna trade and smaller regions have not increased over last year's supply so far, and as the trade in those sections is obstructed from the same causes, the deficiency will nearly, if not quite, balance the supply that will be sent to market from Schuylkill county by railroad for the ensuing three weeks. Many of our collieries below the water level, are "drowned out," as we term it here, and some will not be cleared of water under two weeks.

The quantity of coal sent to market last year from the Lehigh, from July 21st to the close of the season, December 10th, was 513,421 tons, which divided into 10 weeks, is 51,342 tons per week. They may ship up to December 10th again this fall, but the chances are as five to one that they will close at least two weeks earlier, and consequently under no circumstances can the supply from that quarter be increased, after they resume again, more than 50,000 tons, and there may be not one single ton of increase.

The Schuylkill region sent to market, from the present period to the 14th December, in 1849, 909,400 tons, which divided into 20 weeks, gives within a fraction of 45,000 tons per week. When the canal is in full operation again, we cannot average more than 50,000 tons per week from this region, up to the close of the Schuylkill Navigation, which

may take place at least two weeks earlier, and consequently reduce the quantity. The great depression which has characterized the trade this season, the stoppage of many collieries, and the time required to prepare them for work again, together with the great reduction of the working forces of the region, induces many of our operators to incline to the opinion that no increase can take place for the balance of the season, but we put it down at 100,000 tons, which it cannot exceed, and may be reduced to one half in quantity, should any further interruption take place, or the time required for repairs extend beyond three weeks.

The Delaware and Hudson canal company, from the damages sustained by filling up the mines, etc., will not be likely to increase their quantity much, if any, this year over last year's supply; they may fall short—but admit that they can increase 50,000 tons, and the following will be the probable situation of the market:

	Tons.
Increase required in 1850.....	400,000
Possible increased supply from—	
Lehigh.....	50,000
Schuylkill.....	100,000
Lackawana.....	50,000
	200,000

Deficiency in 1850..... 200,000

There never can be less overstock in so extended a market as we have for coal, as there was at the opening of navigation this spring. If properly distributed, we doubt whether there were over two weeks' consumption in the market. — *Pottsville, Journal.*

For the American Railroad Journal.

Documents Relating to the Manufacture of Iron in Pennsylvania.

Published on behalf of the Convention of Iron Masters, which met in Philadelphia on the 20th of December, 1849.

Continued from page 470.

Having thus briefly adverted to the general views which have guided the convention, our remaining space will be given to a few of the most remarkable statements of the documents. The most impressive to a Pennsylvanian is the rapid growth of the manufacture of iron in this country; which is asserted to have reached, at the commencement of the existing depression, an amount "equal to that of England 15 years ago, (800,000 tons in 1834). It is a source of just pride, as well as of hope, that contending against the immense resources of the British works, the steadiness of their running, and their accumulation of skill and confidence under a long continued patronage of the government, our manufacturers have been able to reach so advanced a stage, and that with so powerful adversaries, and in the midst of unexampled misfortunes, they ask no aid except against artificial irregularities, produced by special foreign efforts against them, or by fluctuations in the British supply not resulting from the normal course of trade.

For the purpose of contrasting the limited encouragement thus asked, with the protection under which the British works have attained their actual condition, the Committee on Statistics have compiled a summary of British legislation from the year 1679 to 1826; during which long period of one hundred and forty-seven years, we find "an unwavering protection, always under specific duties, and always increasing in amount until they were no longer needed." Accompanying these duties in the summary, we find, in addition to the prohibitory character of some of the imposts, a series of

grave penalties upon the exportation of workmen and tools; and a list of brilliant inventions carefully guarded in their application, and restricted in their first and most encouraging effect to British works.

Accompanying the report of the same committee are fifteen elaborate tables, the great value of which will be at once recognized. They were prepared by the able chairman of the committee,* during a visit and inspection by him of all the works in Pennsylvania. They exhibit the number and condition of each kind of iron works in the year 1850, distinguishing anthracite, raw bituminous, coke, and charcoal furnaces, bloomeries and forges in general, and rolling mills, showing respectively the date of construction—name of the works—the post office—names of owners and lessees; the number in and out of blast—the number sold by the Sheriff or failed since 1840—the amount of investment in each—the largest product—the actual make in 1849—the annual capacity—the number of men, boys, oxen, horses and mules employed—the dimensions of stack—number and dimensions of tweres—heat and pressure of blast—kind of power used—kind of metal made—form in which the iron leaves the works and the market for sales; for the bloomeries and rolling mills we have further the number of blooming fires and hammers—number of puddling and heating furnaces—trains of rolls and nail machines, and the quantity and kind of materials used, etc., etc. These details are separately arranged with reference to Eastern and Western Pennsylvania; a distinct place in the tables being given to the particulars of each of the works in each of the 45 counties in which there are manufactories of iron.

Of the remaining seventeen counties, nine "contain abundance of iron ore and coal, but owing to the absence of any cheap road to market, they yet remain untouched, leaving only eight counties of sixty-two in the State, not suited to the manufacture of iron."

The number of furnaces of each kind, and of bloomeries is stated at 304; the present capacity of which is 550,959 tons. The investment \$12,921,576.

The number of forges is 121, with a capacity of 50,250 tons, and an investment of \$2,026,300.

The number of rolling mills 79, with a capacity of 174,400 tons, and an investment of \$5,554,200.

The present annual capacity of the State for rails is given at 64,400 tons.

The number of works for the conversion of iron into steel is 13; the amount annually converted being reported at 6,078 tons.

The total number of nail machines is 606, averaging 30,300 tons a year.

The aggregate value of these works must astonish those of our fellow citizens, whose attention had not been given to the importance of the iron manufacture to our State.

Total number of works of all kinds.....	504
Capital invested in lands, buildings and machinery.....	\$20,502,076
Number of men employed.....	30,103
" " " horses ".....	13,562

It is to be noticed that under the head of capital, are included only such lands and buildings as belong to the iron master, and are directly dependant on the iron works for their value. It does not in-

* Mr. Charles E. Smith, whose well known practical skill, aided by personal inspection of the principal works of Great Britain and continental Europe, as well as of those in the United States, had peculiarly qualified him for this duty.

clude farms, grist and saw mills, horses, wagons nor tools, nor the dwellings of workmen in large cities; nor coal land, nor the capital and men employed in running and transporting coal to the works, nor in transporting the finished iron to market; nor the value of ore banks not belonging to the iron master, nor the working of such banks.—Hence, vast as is the amount stated, much remains to be added before we can form an adequate conception of the extent of property and labor involved in the manufacture. Take for example the single item of fuel:

Anthracite coal, 483,000 tons—average value \$3.....	\$1,449,000
Bituminous coal, 9,007,600 bushels at 5 cents.....	450,380
Wood, 1,490,252 cords at \$2 (in coal).....	2,980,504
	\$4,879,884

making nearly five millions of dollars annually, as estimated from the consumption of 1847.

It cannot be otherwise than interesting to trace the relation of so extensive a department of industry to the agricultural and other productive classes of our people. Forming, as this does, an important part of the history of our social progress, it claims the attention of the inquirer, irrespectively of its bearing upon the revenue system, and it is only with reference to its most general aspects that we advert to it here. Whatever may be thought of the particular estimates of the "documents," no reader can fail to perceive that the contributions of the iron manufacture to the encouragement of agriculture have been greatly undervalued in the popular mind. It is not difficult to obtain a closely approximate average of the consumption of persons engaged in that manufacture, and of the number of such persons. Mr. Smith, whose personal inquiries at each of the works give to his calculations the value of direct competent testimony, calculates that there are about 41,600 men directly dependant upon the iron works of the State; that is, about 11,500 in addition to the 30,000 who are in the actual pay of the iron masters. If we concede to him his allowance of five persons to each laborer, we have more than 200,000 persons, or about one-tenth of the entire population of the State dependent upon the manufacturer of iron, but even after any reduction which can be reasonably made from this allowance, the number of mouths to be fed must bear a large proportion to that of the whole people of Pennsylvania.

In a communication from Mr. Samuel J. Reeves, a gentleman at the head of one of the largest establishments in the country, it is stated that the number of people supported by the iron business in the whole country is about 600,000; and to these he allows a consumption of land products to the amount of \$50 per head per annum, equal to a total of 30 millions of dollars annually. We can fully appreciate the greatness of this result, when we have compared it with the amount of our exports. By the Register's tables for the last fiscal year reported [ending June 30th, 1849] it appears that the total value of exports to England, Scotland and Ireland, of flour, Indian corn and Indian meal, was only \$12,848,308, and that the total vegetable food for the United States to all parts of the world was only \$25,642,362. The exports of all products whatever directly or indirectly from agriculture, [exclusive of tobacco, cotton and sugar] including pork, beef, etc., to every part of the world, amounted to only \$38,824,787.

We have not space to continue this view of the subject. The reader will easily recall other topics,

such as the enlargement of domestic traffic; the increase value given to property, the augmentation of state revenues from taxes, and of tolls upon internal improvements. It is aside from our purpose to consider the effect upon our currency and exchanges produced by importations from abroad, especially from countries to which our agriculture cannot contribute all the means of payment, and to which we must transfer specie, or government or corporate securities. This and other connected topics may be better discussed in their relations to the tariff policy of the country. It ought not, however, to be omitted, that the limitation put upon our exports of breadstuffs to Great Britain is much below the demand which the iron used by us makes upon agriculture. Many articles for which the former seeks a market, do not admit of exportation; but they meet with a constant consumption among iron workers at home; and the kind of demand thus occasioned is so far independent of the principal articles exported, as to interfere little, if at all, with the probable further shipments of breadstuffs.

A more restricted, yet very effective mode of exhibiting the dependence of the farming classes, is used by Mr. Reeves, who adds an estimate for some other interests. Taking about fifteen millions of dollars as the value of imports of iron from Great Britain for the last reported fiscal year, it is estimated that there were consumed in the manufacture in Great Britain—

Coal, 1,412,649 tons—Iron ore, 1,053,739 tons—Limestone, 411,706.

The labor, at the rate adopted for the calculation, would amount to about eleven millions of dollars. The number of workmen is put at 56,471; and if these are allowed only \$30 each per annum, the total of farmer's products imported in the form of iron for the last fiscal year is estimated at more than eight millions of dollars; if rated at the American allowance, the value thus calculated would amount to more than fourteen million of dollars.—It will be observed that the value of the coal, ore, and limestone may be considered as created by their use in this manufacture; without which they must have remained unconsumed for an inadequate time.

Mr. Smith reports that of the 298 furnaces in Pennsylvania, 149 or exactly one-half are in blast this year,* and that of this number about one-third are making no preparations to blow during the next year; that in Eastern Pennsylvania, the manufacture of all descriptions of iron which came in competition with the English, is extinct; that a small amount of railroad iron is still made for the interior (as must be the case even for a time after it has ceased to repay cost; but that this branch shows a decline of 54 per cent in two years; and that of the six rail mills in the State, two are stopped entirely—and the remaining four are not averaging half time; that during the first four months of this year fifteen furnaces were sold by the Sheriff, and other sales under execution were expected; and that, judging by the present state of affairs, the make of 1850 will not exceed 100,000 tons.

It is melancholy to witness this decline of so vast a system of industry, holding relations so important with the leading interest of the country. Whether this is to be attributed to causes within the control of the parties primarily concerned in the establishment of that system, or to others properly within the sphere of legislation, must be determined.

* From this number must now be taken five furnaces which have recently blown out.

ed by each individual, according to his economical views. We had designed to abstract some statements of the cost of manufacturing pig and bar iron in the United States and in Great Britain, but we have already exceeded our intended limits of space.

Philadelphia, July 20, 1850.

Life of Richard Trevithick, C. E.

BY HYDE CLARKE, ESQ.

Continued from page 475.

About 1806, an attempt was made by Trevithick to introduce his patent engine, as a simple non-condensing high pressure engine, for pumping and winding in the mining districts, in place of the condensing engine of Boulton and Watt.* He considered that the use of his engine would obviate an inconvenience sometimes felt for want of injection water for condensation.

In 1806—we follow Professor Pole's narration—Trevithick had a non-condensing high pressure engine at work, for drawing ores at Dolcoath mine. This was called by the people "a puffer," from its blowing the steam off into the air. This worked well for a time, in comparison with Boulton and Watt's, but did not in the end answer the expectations conceived, so that though he received several orders for engines from the neighborhood, it is doubtful whether he executed the orders given to him. At any rate, the non-condensing high pressure engine was never much used.

About this time, Trevithick made the first proposal for introducing the use of high pressure steam, worked expansively, to a greater extent than formerly, and substituting, for the common boiler, his cylindrical boiler. This is one of Trevithick's great merits.

In some of the first high pressure engines, manufactured by Trevithick, he used the steam expansively; for in July, 1804, he alludes to the saving of coal effected thereby; but the idea of substituting high pressure steam in the then existing Boulton and Watt pumping engine, and of expanding it down to low pressure previous to condensation, seems, according to Professor Pole, whom we follow, to have occurred to him about 1806, as above stated. On the 18th of February, 1806, he wrote to Mr. Davies Gilbert for his opinion on the practicability of the plan, and that opinion seems to have been favorable. Anxious to make trial of the plan, Trevithick proposed to adopt a new boiler, of his own construction, to Dolcoath great engine, and to work it with high pressure steam expansively. He describes minutely, that "it is not intended to alter any part of the engine, or condenser, but only to work with high pressure steam from this new boiler."

As Professor Pole† remarks, Trevithick's plan would, if carried out, have produced engine nearly the counterpart of those now used. As Trevithick was considerably in advance of his age, his suggestions were not then adopted, and the progress of the steam engine was thus delayed until a later date. One reason which Trevithick assigns in favor of his plan is particularly worthy of observation. He gives his opinion that the momentum of the vast mass of matter the great Dolcoath engine had in motion would answer in effect the purpose of a fly-wheel, by regulating the motion of the engine. It is well known, now, that the great mass of matter in the pump rods, balance bobs, &c., consequent upon deeper workings, has been the principal cause, whereby the modern engineers have been enabled to use expansion to a much greater extent than formerly. This is one among the many proofs of Trevithick's great sagacity and foresight.

During the early part of this century, Trevithick spent much of his time in the metropolis, engaged in promoting his various inventions, and he secured at times the co-operation of many of the active and enterprising men of that day, who were acquainted with his merit. Among these associates

of his pursuits were the Earl of Stanhope, Mr. Davies Gilbert, Mr. Isaac Rogers, Mr. Allen, of Plough-court, Mr. Henry Clarke, Mr. Knight, of Foster-lane, Mr. Taylor, Mr. Nicholson, Mr. Arthur Woolf, and many others.

Among Trevithick's undertakings were included railway and common road locomotion, draining, ironmaking, coining, water pressure engines, mint machinery, railways, silver smelting, dredging machinery, steam navigation, expansion, tunneling under the Thames, ships' tanks, engines of recoil, and air engines.

In 1809, Trevithick was employed in his Thames Tunnel plan, for which a small subscription was raised among his friends for an experimental driftway, as a preliminary to show the practicability of a larger work. The driftway was to be run parallel to the bed of the Thames, and the committee of subscribers felt every assurance of the success of the undertaking, for the operation was very simple, and they had every confidence in Trevithick's ability, and his knowledge of underground works.*

This was the second tunnel attempted under the Thames, Ralph Dodd, the famous projector and afterwards partner with George Stephenson in the locomotive, having obtained an act of parliament for the first, at Gravesend, in 1799, and commenced his work, but which was soon defeated by water flowing in through fissures in the chalk.

Trevithick's tunnel was at Rotherhithe, a short distance from Brunel's tunnel. He committed the usual error of going too near the bottom of the river, the object being a close run, endeavoring to keep at the least possible distance from it, and to save labor and expense, as the funds were limited. Had his experiment been carried through, he would also have been able to give a plausible cheap estimate of the intended tunnel, leaving the increased expenses to be met as they could. Trevithick's error was not productive of much inconvenience to him, nor does it seem to have been the immediate cause of the abandonment of the enterprise, for he carried his driftway to a greater extent without impediment than Dodd did before, or Sir Mark Brunel did afterwards. It was not until he had gone 930 feet under the river,† that he encountered any obstacle, when he got into a hole in the muddy bottom of the river; and at one time a piece of uncooked ship beef, which had fallen from one of the vessels, drifted into the works.

Although the corporation authorities refused to allow him any facilities, he managed to get this hole stopped, and again went on with vigor. He carried on the excavations at the rate of from four to ten feet per day, and soon completed a thousand feet, to the great joy of all parties concerned.

On arriving at this distance, according to previous arrangement with the committee, Trevithick was to receive a hundred guineas, which, after the verification of the work by a surveyor, were paid to him. According to a contemporary,‡ and the end of which seems to be in perfect keeping with Trevithick's character, the surveyor reported to the subscribers confirming the measurement, but asserting that the line had been run a foot or so on one side. This statement, which, if well founded, was not material, Trevithick took in high dudgeon, and chose to consider it as a severe reflection on his engineering skill. His Cornish blood was excited, and, with his usual impetuosity, he set to work to disprove the assertion, without any regard to his own interests or those of the subscribers.—He is said to have adopted the absurd contrivance of making a hole in the roof of the tunnel at low water, and pushing up a series of joint rods, which were to be received by a party in a boat, and then observed from the shore. On the prosecution of this scheme, Trevithick was engaged below, and as delays ensued in fitting together the rods, the gully formed by the opening in the roof at length admitted so much water as to make retreat necessary.—With an inborn moral courage, worthy of a better cause, he refused to move first, but sent the men before, and very nearly fell a sacrifice to his devotion. It has been already observed, that the drift-

way was parallel to the bed of the river, and therefore curved. It necessarily happened, that the water would lodge, as in a siphon, at the bottom of a curve, at which part, on Trevithick's arrival, he found so much water as hardly to enable him to escape, and as he got up the slope on the other side, and climbed the ladders, the water rose with him at his neck. Young Brunel afterwards showed a like gallantry in the other tunnel. The work thus ended after having reached 1011 feet, being within 100 feet of its proposed terminus, and is a melancholy monument at once of his folly and his skill.

On a subsequent occasion, being cross examined as to this occurrence, while witness on a trial, he is said to have admitted the fact of ruining the works, and to have asserted his determination, in any similar circumstances, to defend his own character at whatever sacrifice to other people.

Before this time, Trevithick had brought into use his waterpower engine, one of which was long at work in Cornwall. Water was used as the prime mover.* One of these was put up at the Druid mine.†

In the spring of 1812, Trevithick was fortunate enough to be able to put his ideas into practice, as to expansive working of high pressure steam.‡—He had occasion to erect a small engine at Wheal Prosper mine, of which he was the sole engineer, and in this engine he took the opportunity of trying the effect of the plan he had so long ago proposed. This, Professor Pole says, appears to have been the first Cornish engine ever erected; that is, the first condensing engine, working with high pressure steam expansively, and having the present form of boiler. Professor Pole gives a description of the engine, with which he was furnished by Mr. Richard Hosking, of Perran Foundry, who worked it under Trevithick.

The steam pressure on the boiler was more than 40 lbs. per square inch above the atmosphere, there was no throttle valve, the steam valve was large, and therefore when the steam was first admitted into the cylinder, it must have acted with nearly its full force upon the piston. The engine worked, under its usual load, more expansively than was customary, even with engines in modern days, except some erected within the last five years. The steam was cut off at one-ninth or one-tenth of the stroke. When, however, the load was increased, the degree of expansion was accordingly diminished, and the engine was thus made to lift, by the high pressure of the steam used, a load which had never before been thought possible, showing thereby the great advantage which the method employed would offer, in adapting the capabilities of the engine to the variable nature of the duty required to be done by it.‡

Arthur Woolf also proposed a modification of the expansive principle, and took out a patent for it in 1804. Trevithick proposed his scheme in 1806, and built a Cornish engine on his plan in 1812.—Woolf brought his engines into Cornwall in 1813 or 1814.§ The success of Woolf's engine for some time delayed that of Trevithick's.

In 1815, on the 6th of June, Trevithick took out a patent for what he called a plunger or pole engine. This engine succeeded very well for a time, but having been superseded by a simpler form, it did not survive. The first engine of this kind was put up by Trevithick, at Herland, in 1815, the steam being worked at a very high pressure. In writing to Mr. Davies Gilbert, he asserted its successful trial; but overrating its power, he attempted to make it command the whole water of the mine, a work which would have required two 80-inch engines of the present construction, his engine being 33-inch. As Professor Pole observes, Trevithick failed in the attempt, as he usually did when he aspired at too much. At a subsequent period, Mr. Wm. Sims purchased the patent right of this engine, and applied its principle in the alteration of several engines, which became for several years

* Nicholson's Journal, vol. 1, p. 162; p. 5.

† Mechanics' Magazine, vol. 2, pp. 15, 271.

‡ Pole on the Cornish Engine, Appendix G, p. 51.

§ Professor Pole, in Appendix G, p. 52.

¶ Ibid. p. 54.

* Poole on the Cornish Engine, p. 45, Appendix G.

† For the account of Trevithick's discoveries in high pressure steam, Professor Pole's book is the only authority, and he has treated the subject with the greatest ability and impartiality.

* Mechanics' Magazine, vol. 1, pp. 66, 67; vol. 3, pp. 205, 384; vol. 7, p. 365.

† Ibid. vol. 1, p. 162.

‡ Civil Engineers' Journal, 2, p. 94.

formidable rivals to the best engines in the country.

Trevithick had also invented a cylindrical boiler for the generation of steam, having an internal fire tube. One of them he was about erecting in December, 1804, in South Wales. It was 24 to 26 feet long, 7 feet diameter, internal fire tube 4 feet 4 inches diameter at the wide end, and 1 foot 9 inches diameter at the narrow end, being very nearly the same dimensions as in the present Cornish engines, except that the fire tube is often made of equal diameter throughout. Mr. Pole observes that the perseverance Arthur Woolf showed in bringing his double cylinder engine into operation was chiefly effectual in stimulating the Cornish engineers to avail themselves of Trevithick's plan, by opposing it to the more complicated one of Woolf, and thus to show that it possessed advantages which they had neglected or thought improbable when Trevithick had offered them years before. Woolf himself subsequently adopted Trevithick's boiler.

To be continued.

An Essay on Pen and Pocket Cutlery,

Embracing a Detailed Description of the Mechanical, Chemical, and Manual Operations Performed on Certain Raw Materials, to Convert them into the Means, Implements, and Materials, for Manufacturing Pen and Pocket Knives.

BY A. L. HOLLEY.

Continued from page 470.

CHAPTER VIII.—PRESENT YANKEE METHOD OF MAKING A FOUR-BLADE CONGRESS AND A COMMON JACK KNIFE. FLY PRESS, DIES, PUNCHES AND OTHER MACHINES.

The grinder having taken the knives as left in the last chapter, glazes, laps, and polishes the faces, swages and backs of all their blades on wheels before described. Before the steel is polished, care is taken to remove all cake emery and tallow which may remain in the nail mark, for any grit or oily substance would destroy the effect of the crocus.—When the grinder has completed his work on the knives, they are returned to the finishing room and honed. The best hones used in Sheffield are found in Germany, though a superior but very scarce article of the kind is made from the greenstone found among the ancient pavements of London, and good hones are also found in the United States. The stone is from one to two feet long, and from one to two inches wide, to which oil is applied. The blade is held not with its face on the hone, for in this case the polish would be removed, but with the face slightly elevated, so that the edges may be bevelled by the stone. The finisher usually tests the whittling powers of his blade, by drawing it across and cutting into the skin of the palm of his hand. The knives are now brushed on the joints with fine lime, thoroughly cleaned and wiped without and within—particularly the blades and springs, which would rust by the slightest moisture—with shammy skin, when they are entirely finished. The grinder's work is perfect when the steel is evenly polished, and no scratches and marks appear, and when the blades are not bent and softened by too much heat.

Let us now look at the present Yankee method of making the same knife, and show the improvements and changes which Yankee go-ahead-iveness have already wrought. The scales are made by cutting them from sheet brass by a machine consisting of shears and gauges; the holes for the bolster pins are made by either a hand screw press—which consists of a fixed nut and fixed die or circular hole, and a punch which corresponds with the die, and is moved vertically by the screw—or by a press which dispenses with the power gained by the screw, and it is worked by either steam or

water. The bolsters are cast and fastened to the scale ends as before described. The material maker then by a single operation, which with the aid of machinery is accomplished in an instant, dispenses with trimming the scale ends, marking the bolsters, and drilling the small holes for the covering. The machine used is a fly press, consisting of a balance wheel which rolls on, not with the shaft, and to which the motive power is applied, also a die and punch, and the apparatus to move the latter. The die consists of a mortice shaped like the pattern of the knife in which a plate containing orifices corresponding with those in the scale, and indentations similar to the bolsters is supported by a spring. The punch consists of a plate shaped like the knife, with steel pins projecting from its lower surface and fitting the orifices in that plate which moves in the die, and is fastened to a carriage which moves vertically. A moveable step below the machine, when pressed down by the foot of the operator, will cause a pin to connect the fly wheel to the shaft, and thus move the carriage and punch. The circular motion of the shaft is converted into the vertical motion of the carriage by a crank, or eccentric wheel, with or without the apparatus, called by Arnot the seventh mechanical power. By placing the scale as just left on the die, and pressing down the step, the carriage will descend, the bolsters and scale will be trimmed by the edges of the die and punch, the pin holes will be made by the points projecting from the latter, and the bolsters will be marked for drilling by two short points at either end of the punch. In this state the scales are taken by the cutler, and the bolsters bored as fast as they can be laid on the carriage of a machine, which consists of a drill standing vertically, and moved round from 1000 to 1500 times per minute by a belt from a drum in the rear. The scales are then put up in points, the edges of the bolsters fitted for the covering, and the edges of the scale more perfectly fitted to the plate by files, if necessary, which is not often the case. The scales are then dished, and the covering prepared, matched, and put on as before described. The springs are taken from the material maker, who by a single operation by the aid of the dies and punches of the press, dispenses with the entire work of the spring forger, with marking the spring, and with the greater part of the filing necessary to fit it in the old way. They are then bevelled, and the flash is removed by a drop—which is a weight falling from a certain height on to an anvil or boss—and drilled like the bolsters, by machinery. They are now almost perfect, and ready to harden, but are filed on the inside, and then between two plates, bent, hardened and tempered. Before the idea was suggested of marking the spring at the same time it was cut out by the press, they were marked by striking them as they lay on a steel plate, furnished with gauges, and an upright pin. The blades are cut from sheet cast steel by the press, dies and punches, with a blunt joint, but perfect tang, and the cutting part forged by hand, as described in Chap. III.: thus they are squared and marked by one operation. They are then drilled by machinery, fitted and dressed as before described. The spring holes in the covering are drilled in a like manner, and the knives put together and finished by the old English method. This is not the manner in which all, or the greater part of fine knives are now made in America, as the machinery is not yet perfected, or universally employed. As long as such materials as pearl and shell are used for fine knives no very great improvement can be ex-

pected, as yet, and the labor saving machines must be perfected first, on jack knives and coarser work.

We will now look at the present method of making straight common jack knives, called flat backs, in America, which, though not as highly finished as fine knives, are made expressly for, and adapted to hard service. The blades are cut out by a method described in Chap. III., hardened and tempered, and ground as blades usually are [see chapter IV.] and are then ready for the handle maker.—The iron scales and bolsters used for jack knives, and made in a solid piece, are usually in England forged from nail rods by a scale forger, who heats a portion of the rod, strikes the bolster in a boss on one end, and flattens enough for a scale, which is finished in two heats. This is a long and slow process, but still resorted to by some manufacturers who think forged scales are superior to others, because more tenacious and harder. As long as scales made cheaper are good enough, and answer every purpose, though not equal to forged, it is as well to use them as any. They are made solid, however, perfectly and in great quantities by machines, which consist of two iron rollers, similar to those of iron rolling mills, one of which is turned smooth and even on the surface, while around the circumference of the other are screwed bosses equally distant from each other. These rollers revolve with the same velocity, and red hot rods being passed in at one side, come out at the other a long string of scales and bolsters, which are cut apart by machinery. Another machine consists of a shaft, in the centre of which is a raised bolster boss, which meets a raised plain boss on the other shaft, which revolves at the same speed, and will make a scale and a bolster at each revolution. Solid scales have been made by a drop, furnished with bosses, and in other ways, but neither of these methods have as yet been brought to perfection, though one will certainly answer every purpose eventually.—The majority of iron scales are probably made of two pieces. The bolster is struck by a hand hammer or by a drop, in a boss, and cut off by a shears formed from two chisels, which operation is very speedily performed. A pin is also formed by the boss, which projects about an eighth of an inch from the bolster. The scales are very easily cut from sheet iron, and are finished with the bolster, like brass scales, as described in chapter VI. The scales, after either of these operations, are of course differently shaped, and do not fit the plate, but the edges are cut off by a die and punch of the fly press, and not till within a few months the blade rivet hole has been marked, and the four other holes made by the same die and punch, as fast as they can be laid on and taken off, as before described. By comparing these operations with those of the English cutlers a few years ago, we find a very decided improvement, for which we are certainly indebted to Yankee ingenuity and contrivance.—The bolster holes are now drilled by machines, nearly as fast as they can be taken up and laid down, and till recently all the scale holes were drilled, by laying it on a wood boss, and placing the plate over it for a gauge. They are now put up in points, the edges more perfectly fitted to the plate by a file, and the outsides are already regular and fitted for the covering. The springs are cut out, and marked by the press, then drilled by machines, filed inside, and on the ends, bent, tempered and glazed on the end and inside, as before described. The covering is fitted and put on as usual, trimmed by a circular saw, filed down to the metal scale, and coarse and fine glazed on the front edge. The

blade tangs are then glazed and burnished on the edges, and the whole is rivetted together. The backs are then ground, sometimes on the Wickersly, but usually on the Nova Scotia stone, after which they are glazed, then polished on an emery wheel with charcoal and boulder, [see chap. VII.] The knives are then hafted and buffed as before described, when the grinder glazes the blades, after which they are honed and cleaned ready for packing.

A machine has been recently put in operation, in one of the manufactories of Connecticut, which fits the covering to the bolsters, and consists of gauges, a moveable carriage, and a burr wheel similar to a circular file, and is used chiefly for jack knives.—Burr wheels are occasionally used to fit the edges of covering to the scale. Numerous machines are in contemplation, and some in the process of building, which it is hoped will dispense with a great portion of the manual labor, now performed on jack knives. Many little jobs, as they are considered, formerly accomplished by hand, will be finished in less than one quarter of the time now occupied, and many of these little jobs will be dispensed with entirely. English operatives, although more careful, and perhaps more skillful at present than Americans, perform the most difficult operations by hand, and by steady and long continued manual labor, produce most beautifully wrought and finished fabrics, but obviously never indulge the idea that this may be accomplished by an easier and shorter method; while the Yankee workman is not content to go through the same tedious routine of slow manipulation day after day, but "toils and studies to perfect a machine, which will do his work twice as speedily, while he puts on the steam, and studies to drive it a little faster. The perseverance and inventions of the latter are indispensable in these days of improvement," while the thoroughness and skill of the former, though commendable, does not keep pace with the vicissitudes of the times. The people must have pocket knives, and they will have them cheaper than they can be made by hand in this country, cheap in proportion to other goods, and the manufacturer must live, consequently he must employ machines to operate for him much faster and cheaper than workmen can labor.

To be continued.

THE IRON DOME OF THE INTERNATIONAL EXHIBITION HALL.

The construction of this dome, 200 feet in diameter, though of light sheet iron, will be no joke.—We may remind the reader that it will be double the size of our St. Paul's dome, which is about 112 feet in diameter. The dome of St. Peter's at Rome, is 139 feet in diameter, and that of the Pantheon 142 feet. This central hall will be a polygon of sixteen sides; four of which will open into gardens, reserved around it. Its main walls will be of brick, and about sixty feet high.—*The Builder.*

The Remington Bridge.

Montgomery, Ala., July 18th, 1850.

TO THE EDITOR OF THE R. R. JOURNAL:

In your issue of 6th July, there appeared a brief criticism on the Remington bridge, which is not entirely correct in its scope and bearing, and which, with your permission, I will briefly notice.

1. You say your are "informed" I use truss work, making the bridge simply a truss bridge.

2. That there is no new idea or principle in the bridge: wooden suspension bridges, of rude structure, having been in use in South America from time immemorial.

3. That the model in New York is a very pretty toy—although 160 feet long; and that if we must

have suspension bridges, iron is stronger in proportion to its weight, is more durable, and will prove more economical in the end.

1. In reply to your criticism of which the above stated points constitute the gist, permit me to remark: the Remington bridge is not a truss bridge, nor does it in any particular partake of that character of bridges. On the contrary, the truss principle is studiously avoided. I need not tell you that a wooden bridge of 400 feet span, with even a three feet depth of truss, on any known principle except that on which I construct bridges, would not sustain its own weight. Now, the Remington bridge may be built of a much greater span, and will sustain, in addition to its own weight, five hundred tons. I say five hundred tons, that your credulity may not be excited. I know it will sustain even a much greater weight. That the Remington bridge can be built without truss work for 406 feet span, is demonstrated by a practical bridge in this city—the actual cost of which does not exceed four dollars and fifty cents per running foot; and which is built to show the plan on which railroad bridges are to be constructed. Am I right in the opinion that this bridge of 406 feet span is the longest single span bridge in the world?

2. That wooden suspension bridges, of rude structure have been in use in South America from time immemorial is true. But these bridges, so far as we are informed, were constructed either from the bark of trees, or small trees twisted into the form of a rope. Of whatever material they were constructed, they were simply rope suspension bridges, and were never expected to sustain more weight than the traveller or porter and his burden. The effect of weight in passing over one of these bridges is totally different [owing to a total difference of construction] from its effect on the Remington bridge. In the Remington bridge there is neither undulating or lateral motion, no matter what be the weight upon it. In the rude bridges of South America the slightest weight would produce very great undulating and lateral motions; and this material and very important distinction is owing to the distinctive principle which govern the construction of either structure. Another very important distinction between a suspension bridge and the Remington bridge is, that in the former, whether it be a rope or chain bridge, the weight when it enters upon the bridge is not equalised over the whole sustaining strength. It is only equalised when it reaches the centre. Hence the actual strength of the bridge is only attained at one point—the centre. Not so the Remington bridge; in that the strain is equally divided at all points along the longitudinal supporters. They will sustain as great weight near the abutments as in their centres. It is this important principle that I claim as new and novel in this bridge. To illustrate more clearly this point I will add that, the tensile strength of timber when in nearly a horizontal position is made to sustain nearly the entire weight necessary to separate the fibres. This I claim is a new idea in mechanics. I applied it in the use of timber in constructing bridges for the first time. The same fact does not apply in any suspension bridge, whether constructed of hemp or iron. Another, and very important distinction between a suspension bridge and the Remington bridge is, that in the former, only a very small portion of the material used can be made a sustaining power. The material that is not [excepting of course the towers] is a dead weight on the material that is; and as a necessary consequence, there is very great dead weight to sustain before a single

pound of loading is put upon such a structure. In the Remington bridge every inch of material, every nail [except of course the abutments] adds to the strength of the structure. Longitudinal supporters, hand railing, flooring, are all constructed so that the greatest strength of all the timber used is obtained.

3. With due deference to your judgment I must continue to believe that a model bridge, one hundred and sixty feet span, constructed of four stringers one inch square, which will sustain as much weight as the safety of the building in which it is erected would allow the application of—is entitled to be regarded as involving more important principles than are necessary to constitute a toy. But altho' its capacity to sustain weight, if it be properly constructed, is as I have stated, still it must be understood that this model is a model of the Remington bridge only so far as it demonstrates the tensal strength of timber laid in nearly a horizontal line. Neither can I agree with you that iron suspension bridges are "stronger, more durable, and cheaper in the end." To demonstrate the strength of the Remington bridge I send you herewith a report of a test trial of the strength of a model bridge in this city, in December, 1849. In this bridge three stringers one inch square sustained fourteen and a half tons at a curvature of one-fiftieth of their chord line. Now, sir, the best charcoal iron, with a curvature of one-fiftieth of its chord line will only sustain three tons to the square inch, and consequently if the stringers had been iron, in the bridge referred to, the breaking point would have been at nine tons. For the facts as to the sustaining strength of iron, I refer you to Talford, than whom there is no better authority. Thus much for strength. In reference to durability permit me to remark that you are also, as I conceive, at fault. A wire suspension bridge is never covered—at least I have never heard of one being covered—and is therefore subject to oxidation, notwithstanding it may be repeatedly painted. The thousand joints and joinings are thus exposed and injured. The longitudinal supporters, which are the important points of a Remington bridge, are as secure from moisture as any encased timber can be, and being in their centre rarely over 1½ inches thick may be obtained from heart timber. Moreover they are so constructed that they may be replaced at pleasure. Understanding this important fact, it is only necessary to remark [to convince any reflecting mind that the durability of the Remington bridge may be measured by very many years] that stone, brick or cast iron abutments are as well adapted to it as are wooden abutments. A cast iron abutment would perhaps endure for a century. As the longitudinal supporters required removing they could be secured to these abutments with very little more trouble than is required to set up a pair of folding doors. The next and last point in your criticism is cheapness. In this particular the Remington bridge has no competitor. I do not deem it necessary to dwell upon this point. I will briefly remark, that the entire cost of a Remington bridge for any given span, would not exceed the cost of the wood work alone,* in a suspension bridge of equal span. Thus you will perceive the disparity is very

* In a wire suspension bridge of 400 feet span there is used as much timber as would construct a Remington bridge of the same span. In addition to this the mechanical labor on the wood work of a wire suspension bridge would equal the cost of labor necessary to build a Remington bridge.

J. R. R.

great between the cost of the structures. Should a wire suspension bridge of 400 feet span, complete in everything, cost \$20,000, a Remington bridge of the same span would cost \$2,000.

JNO. R. REMINGTON.

AMERICAN RAILROAD JOURNAL.

Saturday, August 3, 1850.

Railroads in New York City.

The Hudson river railroad company has been administering a coated pill to the people of New York, in the shape of a locomotive, closely boxed up, eating its own smoke; and but for the noise made about it in the newspapers, we do not know but our citizens would have remained ignorant that any such monster had been quietly and harmlessly traversing our streets. The gradual appropriation of the whole lower part of the Island to places of business, compels the greater part of our business men to reside from two to four miles "up town." At least one half, and in many cases an hour, is consumed both at morning and evening in going to, and returning from business. This is a very great loss and inconvenience, which is daily becoming greater. New York can spread in only one direction, and this fact has already built up two large cities in our neighborhood; a greater part of the inhabitants of which would have remained on our Island, but for the difficulties of getting to their places of business, and from the high rents consequent upon the crowded state of the lower part of the city.

Now we are satisfied that it is for the interest of New York, in whatever way viewed, to allow the locomotives of the Hudson river and Harlem railroads to run to the lower part of the city. It would cost a large sum to open roads for this purpose, and guard them from liability to accidents, but the advantages that would result from doing so would justify the outlay. The expense is the real objection. The danger to be feared from the trains exists more in the imagination than reality. Look at Boston. Her railroads penetrate the very heart of the city in every direction, cross important streets and the trains are drawn by locomotives at high speeds, yet we hear no complaints, and accidents very rarely occur. Nothing could induce the people of that city to prohibit the running of railroad trains within its confines. They are there the greatest of conveniences. A merchant can step from his counting room into a car, and in thirty minutes, in less time than suffices our merchant to reach his home up town, the former is at his residence fifteen miles from the city. If we had a railroad running from the Battery to the head of the Island, our people would prefer to remain upon it, instead of going to Brooklyn, Williamsburg, Jersey City, etc., for the sake of enjoying the Croton water if for no other reason.

The inconvenience of which we have spoken it is admitted by all, is seriously prejudicing the interests of this city. The examples of Boston shows that no danger is to be feared from running a well managed locomotive through it. The objection against this is owing rather to prejudice than to any sufficient reason. Such being the fact, cannot something be done to secure so desirable a result?

New Hampshire.

Eastern Railroad.—The old board of directors have been unanimously re-elected, as follows:—Ichabod Goodwin, Portsmouth; Daniel P. Drown,

Portsmouth; Isaiah Breed, Lynn; Benj. T. Reed, Boston; Stephen A. Chase, Salem. Ichabod Goodwin, President; Daniel P. Drown, Secretary; and Wm. S. Tuckerman, of Boston, Treasurer.

Remington Bridge.

Our readers will find in this number a communication from Mr. R. in relation to his bridge. A notice of the article was crowded out of our present paper by a press of other matter. It will appear in our next.

The Iron Interest.

We give up a large part of our paper of to-day to communications upon the iron interest of the country. Independent of the influence they are calculated to have upon the action of Congress in modifying the rate of duty upon foreign iron, they possess great interest as presenting a mass of statistical information with regard to one great branch of national industry, never before made public.

Communication Across the Continent.

We invite attention to the article in our present number upon the importance of Congress taking immediate measures to provide for the greater safety and convenience of the immense tide of emigration now moving towards the Pacific. We shall recur to this subject in our next.

The Maine and Nova Scotia Railroad.

The great convention to promote the above project was held in Portland on the 31st instant. It was very numerously attended by delegates from the British Provinces, and from the Eastern States.—The high standing and respectability of the delegates in attendance, and the character of the proceedings will at once give this project a very prominent place in the public mind.

The convention was organized by the choice of the following named gentlemen as officers:

HON. JOHN HUBBARD, Governor of Maine, President.

Vice Presidents:

Admiral the Hon Wm. FITZWILLIAM OWEN, of New Brunswick.

His Worship, HENRY PRYOR, Mayor of Halifax.

" HENRY CHUBB, " St. John.

" JOHN SIMPSON, " Frederickton.

Hon JAMES B. CAHOON, " Portland.

" FREEMAN H. MORSE, " Bath.

" H. A. S. DEARBORN, " Roxbury, Ms.

Gen. ALFRED REDINGTON, " Augusta.

Hon. TIMOTHY BOUTELLE, of Waterville.

" H. C. SEYMOUR, State Engineer, of N. York.

" P. M. FOSTER, Prest. of Senate of Maine.

" SAMUEL BELCHER, Speaker of H. Reps.

" E. L. HAMLIN, of Bangor.

" ANSON G. CHANDLER, of Calais.

" J. BELL FORSYTH, Esq., of Quebec.

" F. H. ALLEN, Prof. of Law, Cambridge, Ms.

Dr. JAMES ROBB, Prof. of Natural Philosophy, Frederickton.

Secretaries:

F. R. ANGERS, Esq., of Quebec.

ALLEN HAINES, Esq., of Portland.

GEO. A. THATCHER, Esq., of Bangor.

WM. JACK, Esq., of St. John.

JOHN ROSS, Esq., of Nova Scotia.

On taking the chair, the President addressed the convention as follows:

Fellow citizens and gentlemen of the convention—I thank you for the distinguished honor you have conferred upon me, in calling me to preside over your deliberations. Such services as I may in this position render, in promoting the important objects of this meeting, shall be cheerfully and impartially bestowed.

We are assembled, fellow citizens, to interchange opinions, to impart mutual information

and to deliberate upon a subject that is pregnant with consequences of the highest import to this and future generations. It is no less an object than to ascertain the best channels and the best means for putting us in direct and speedy communication with each other and with the whole world to give us the easiest and cheapest means for the interchange of commerce and of mind; to enable us to develop and bring into productive energy the unparalleled natural resources of our State; in short, to bring us in communication with the spirit of the age.

Maine must not be delinquent to herself; we may not be recreant to ourselves and to posterity.

Our brethren of this beautiful city have volunteered to become pioneers in a railroad enterprise, worthy of the State and of the age. With a spirit of self-sacrifice which does honor to themselves and to the times, they have staked their all for the common good of the State.

This enterprise, gentlemen, is however, but the beginning of the end.

We want accurate knowledge of our natural facilities for communication; we want a clear comprehension of the expenditures necessarily involved in developing such facilities, and of our ability to meet such expenditures; then only can we advance with safety and certainty.

Then shall Maine at her appointed time attain to that exalted rank among her sister States which she is destined to reach.

Brethren of the British Provinces, we bid you a hearty welcome. Most cordially will we unite with the sons of our father land, in all the measures calculated to promote our common good, and to advance the cause of freedom and humanity.

On motion of John A. Poor, Esq., the following gentlemen were appointed a committee to report upon the business of the convention, viz:

David A. Neal of Salem, Josiah S. Little of Portland, George W. Stanley of Augusta, J. R. Chadborne, of Eastport, S. R. Hanscom of Calais, Hon. J. W. Johnston of Halifax, John Wilson of St. Andrews, John H. Gray of S. John, Hon. L. A. Wilmot of Frederickton, M. H. Perley of St. John, R. B. Dickey of Cumberland, Hon. J. B. Uniacke of Halifax, Hon. Edwin Bottsford of Westmoreland, John Howe of Boston, A. W. Haven of Portsmouth, Ichabod Goodwin of Portsmouth, J. Bell Forsyth of Quebec, Hon. Ruel Williams of Augusta, Hon. T. Boutelle of Waterville, John Neal, John A. Poor and F. O. J. Smith of Portland.

The meeting then adjourned to 3 o'clock, P. M.

AFTERNOON.

The meeting was called to order according to adjournment, and the Committee on Business not being ready to report, Hon. Robert Rantoul was called upon and addressed the meeting in regard to the importance of constructing a line of railroad between the proposed points—speaking of it as one of the greatest projects of the age, etc.

Mr. Rantoul having finished, the Chairman of the Committee on Business, Mr. Wilmot of New Brunswick, presented himself, and stated that the Committee would not be ready to report till to-morrow (this) morning. He requested on the part of the Committee, that they might be allowed to sit during the convention, and from time to time report upon such business as might be deemed necessary, etc.

His report was accepted.

Memorials and papers embodying resolutions, etc., of meetings held in various sections on the

route or routes proposed, were then read, some tendering money, materials and facilities in aid of the great work—and evidencing unlimited enthusiasm in regard to it.

John A. Poor, Esq., then read letters, expressive of interest in the success of the undertaking from the following gentlemen:

Millard Fillmore, President of the United States, Edward Everett, Levi Woodbury, J. Phillips Phoenix, H. Hamlin, J. W. Bradbury, N. S. Littlefield, B. Silliman, Joel W. White, Hon. George Moffat of Montreal, A. T. Gault, Esq., President of the St. Lawrence and Atlantic railroad, Lieut. Maury, U. S. Navy, and a great number of others.

The meeting was then addressed by Mr. Watts, of Frederickton, and by Hon. J. B. Uniacke, Attorney General of New Brunswick; after which it adjourned to meet at 9 o'clock the next morning.

We are not able to give the second days proceedings in our present, but shall give them fully in our next number.

Railroad Negotiations and Progress.

Since our last, the Milwaukee and Mississippi railroad company has purchased through its President, B. Kelborn, Esq., iron for 55 miles of road. This distance carries the road into the Rock river valley, the garden of Wisconsin, and secures for it a large business as soon as it shall be opened.—Twenty-five hundred tons of the above were purchased of Reeves, Buck & Co., of Philadelphia, and are to be manufactured at their works at Safe Harbor. The price paid for these has not transpired; and though it is probably above the cost of the foreign, the difference it is believed, will be made by the superior quality of the domestic article.—The high standing of Reeves, Buck & Co., and the interest they have in furnishing a first quality rail, is certainly a sufficient guarantee for this. An American manufacturer, to succeed, must make a superior article. The home is his only market. He cannot, like the Englishman, send his refuse rails to a foreign market, and escape the consequences of selling a bad article. That the English manufacturers can, and do make good rails is admitted; but that, at the present low prices, they make a great many very poor, is equally true. A majority of these inferior rails are sent to the United States; and it frequently happens that at the very lowest rates, our companies pay much more for them than they are worth. The rail to be made by Reeves, Buck & Co. is to weigh 50 lbs. to the yard, and will cost per mile about the same as the common sized English bar. It is to be delivered in New York in season to forward to Milwaukee before the close of navigation.

The whole length of the line of this road to the Mississippi river is two hundred miles. This the company propose to complete in three years from the present season.

The East Tennessee and Georgia railroad company have, we understand, contracted, through Raymond & Fullerton, of this city, for 8,000 tons of rails, manufactured by the firm of Bailey, Bros. The rail, if we mistake not, is to be of the U pattern, the same as laid on the Atlantic and St. Lawrence, and the York and Cumberland, Penn., roads. The above amount will carry this road to the Tennessee river, a distance of 80 miles from Dalton, its point of departure from the Georgia road. Dr. Ramsay, the agent for the expenditure of the State road, Mr. Keyes, President of the road, together with M. B. Prichard, Esq., the Engineer, are now in this city.

Connecticut.

Norwich and Worcester railroad directors chosen at the annual meeting July 10—

Joel W. White, President, Alex. Dewitt, J. N. Perkins, John A. Rockwell, Elihu Townsend, Wm. Aug. White, David A. Neal, Jed Huntington, and Charles Johnson.

A report of the directors was unanimously adopted. It says—

Holders of 14,160 shares of the old stock have subscribed for their proportion, 25 per cent., of the new stock, making now 40,700 shares of preferred stock, and leaving only 2,840 shares of old stock not subscribed on.

A dividend of 2½ per cent. out of the net earnings of the six months, ending 31st May last, was declared on the preferred stock, payable 15th instant. The directors state in their report that the business of the past year as a basis the income will not be less than 5 per cent. per annum on the entire capital, when all is made preferred stock. The receipts for the first week in July are \$5,800, showing 20 per cent. increase over same time last year.

New Jersey.

Hackensack Railroad.—At a meeting of the stockholders of this company, at Congress Hall, on Wednesday last, the following persons were elected directors for the ensuing year:—

C. S. Van Wagoner, of Patterson.

D. K. Allen, “

John Chadwick, “

John Ackerman, Jr., Bergen Co.

Henry H. Voorhis, “

Garret G. Ackerson, “

John Wood, New York.

Now that the company is organized, we presume no time will be lost in commencing the work, and the road will be finished with all convenient despatch.

Impulsion.

New Mode of Locomotion.

Experiments have been made upon some European railroad of impelling railroad trains by horse power; the horses being carried along in a car appropriated to them, and communicating their power in the same manner as they do to horse ferry boats, in common use. A good deal is said in its favor, but we are convinced that its only merit is its novelty. Steam power is vastly the cheapest, and may be developed to any useful extent in the space occupied by one horse. These are the reasons that led to the abandonment of horse power, and the same reasons will continue to prevent our return to its use.

North Carolina.

North Carolina Railroad and Stockholders' Meeting.—A meeting of the stockholders of the North Carolina Central railroad for the purpose of organizing the company, was held at Salisbury, on the 11th inst. Hon. Duncan Cameron, of Raleigh, acted as chairman, and John B. Lord, of Rowan, and ——— Phillips, of Orange, as Secretaries.

The gentlemen whose names follow were elected directors of the road for one year: Wm. C. Means, of Cabarrus, John B. Lord, of Rowan, John I. Shaver, of Rowan, Francis Fries, of Forsythe, John W. Thomas, of Davidson, John M. Morehead, of Guilford, John A. Gilmer of Guilford, Benj. Trolinger, of Alamance, Wm. A. Graham, of Orange, Romulus M. Saunders, of Wake, A. J. DeRosset, Jr., of Wilmington, A. T. Jerkins, of Newbern.

The board of directors appointed Ex-Gov. John

M. Morehead President, fixing the salary at \$2,500. John U. Kirkland, of Hillsboro, was appointed Secretary and Treasurer, and Major Gwynn, Chief Engineer.

The surveys will be commenced early in August. Three corps of Engineers will be formed for the work.

According to a provision of the by-laws adopted, subsequent meetings of the stockholders are to take place at Greensboro, Raleigh and Salisbury, alternately.

St. Louis, July 15, 1850.

Editor Railroad Journal:

Sir—The surveys of the “Pacific Railroad” are well under way, and the company will have information enough by the end of this season to admit of the location of 100 miles next spring, and the commencement of construction then. The country is more broken than the railroad sections of Indiana, Illinois or Ohio, and the general plane of the southern half of Missouri, more elevated. The prairies of the upper part of the State, through which our route passes, are exceedingly fertile and very healthy because elevated. To the north of the Missouri river, the lands are in great part taken up, the two rivers, the Mississippi and the Missouri, which bound them on three sides, affording much greater facilities to market than is enjoyed by the southern half of the State. In the southern half there remains still a large proportion of “Congress land” unappropriated, much of it of the richest and most inviting character. The table lands on all the main ridges here, and on nearly all the subordinate ridges are open prairies, yielding where cultivated, heavy crops, and where open, pastured in common by herds of cattle, and horses and mules, the property of adjoining farmers.—This land will be rapidly bought up and rapidly brought into cultivation, so soon as there are means of egress provided for its harvests. Any description of the extent and beauty of these prairies, and of the great fertility of the soil would be considered by your readers in the east entirely exaggerated.

But my object in writing you now, is to claim your aid, (in conjunction with the press generally of the Western States,) in procuring from the government a fair examination of the country between our western boundary and the Pacific, and a survey of the several routes and passes which are eligible for a road or railroad.

The interest which the Western States have in this matter seems very imperfectly understood, and the lukewarmness of the government is irreconcilable with the supposition that it can be aware of the amount of emigration which has gone heretofore, and is now under way, solely from the Western States; composed almost entirely of Americans, old settlers, or the sons of old settlers, the greater part of them in search of means to enable them to live comfortably here, and to extend their farming operations; and few with the intention of making California their future home; an itinerant population, peculiarly dependant on travelling facilities, a large fraction of it being constantly on the road. There probably is not a town or village in this State, in Illinois, Indiana nor Ohio which has not sent forth its adventurers, and in the section of this State over which I have travelled lately, embracing from St. Louis to the western line, there are few farm houses whose inmates are not in some way interested in, when not related to persons who are on the plains or at the mines—all are strongly interested therefore in any scheme

which promises to increase the facilities of communication with their friends—to make their progress on the road more rapid, more easy and less expensive. To the extent of this State the Pacific railroad will vastly increase the present facilities of travel, and the hearty support which it receives from the counties through which it passes, in their corporate capacities, and also from the owners of land individually, show that this is well understood by all classes. But beyond this State nothing is doing to improve the present savage trails, to render them, by the establishment of posts, more safe, to examine the difficult parts on the existing route and ascertain the changes that can be made to advantage, to make known where facilities for water and for pasture off and on the road exist, and to render secure such small settlements along the route as the demands of the passing emigrants for supplies would naturally create. The immense extent of the emigration, its character and its connections would have warranted an early attention on the part of the government to its security.—Many lives have now been lost which might have been saved, much unnecessary suffering has been endured, which, had a tithe of it occurred by shipwreck on any foreign coast would have created a national excitement. Had a foreign Consul been as guileless of any kind of succor, or had a foreign government been as indifferent to the distress of our citizens under similar circumstances, as our own government has been, there would have been no end to the manifestations of indignation by the press. But our politicians seem so entirely absorbed in swaddling and unswaddling that compromise baby as to have no sense at liberty for any other employment.

Our railroad is very much interested in the speedy application of those assistances to which I have adverted. The safety of the route across the plains, and the improvement, will increase the amount of emigration; and the establishment of posts, and the supplies which will be furnished by these posts, will reduce the expenses of the emigrants, and will enable them to start and to travel with a reduced provision for contingencies, with lighter loads, and with more alacrity and cheerfulness. What we want pressingly, is the establishment of these military posts on the present travelled route. Their positions can be changed when a minute knowledge of the country shall render change advisable, but their presence now is indispensable, and their absence is all but criminal.—The outrages of the Indians are becoming more frequent. A force in presence would have kept them in check, and might possibly have altogether avoided that general war with certain of these Indian nations, which their recent irritating attacks and successes makes now all but unavoidable. We want also earnestly such a fair and careful survey of the route by some members of the topographical corps of engineers as will make plain its capabilities for a road or a railroad, and show how the mountainous country which interferes can best be passed, and will enable those acquainted with railroads to judge for themselves of the probable cost of such a communication to the Pacific on this northern route.

There is an apprehension felt here, that a more southern route, thro' Arkansas and by El Paso is favored at Washington, and it is said [without any definite source for the rumor being given] that Col. Abert and certain members of the company of topographical engineers give a preference to that route, and that a survey of that route

only will probably be provided for, and the examination of all other routes discouraged. I know enough of Col. Abert to believe that whatever opinion he may entertain topographically of such an extreme southern route to California, he would throw no obstacle in the way of such a thorough examination of other routes now travelled, as would demonstrate their true character, show how their difficulties can be overcome, and afford the means of general comparison, in regard to distance as well as grades, with particular cities and particular sections of country.

The great travel from the Mississippi valley cannot ultimately be made to pass through any one funnel. The Western States in the upper part of the valley will find a northern passage convenient to the houses of their citizens, and the Southern States will find a southerly route convenient to their section of the country, which, to emigrants of the Western States moving to California would be very circuitous. Look at the length of the Mississippi valley, and you will be satisfied that no one route can be located so as to concentrate the entire Pacific travel. The emigrants from Michigan, Wisconsin, Ohio, Indiana, Illinois, Iowa and Missouri, will not come down to the Arkansas to pass southerly by El Paso, to that part of the Pacific, whither they are bound; as little will the emigrants from Louisiana, Mississippi, Alabama, etc., be content by and by to pass across by the northern route, although to a great extent they do so now.

We may fairly assume that the routes now so generally travelled, possess certain advantages which entitle them to be thoroughly examined and improved in the first instance into good and safe travelling roads. Such roads practicable for wheel carriages, are necessary heralds of any railroad, and must precede it. The committee of the House of Representatives has reported in favor of Whitney's railroad, but I trust that the House will not commit itself to any particular project, until it has voted such an appropriation for surveys by the United States Engineers as will secure a thorough examination of the country on two or more leading routes, and place before it some disinterested testimony, where now the testimony and assertion is all most entirely ex parte. The people of this State will in all probability petition Congress for such an examination. All the States are more or less interested in this matter, and nearly every individual would look with favor on any arrangements having this end in view—the greater number from motives of interest, personal or pecuniary, and the rest from the feelings of good will which fortunately accompany all important scientific undertakings—feelings that would be shared by Europeans as well as by Americans. To give any single man or company a monopoly of such a scheme without an intelligent understanding of its merits, would be very unfortunate. I hope that you will agree with me that no privileges should be given which would debar the action of any other company, or the construction where circumstances are sufficiently matured to admit of it, of any other route. We look for no unfair monopoly here, and are confident that whether as a part of the main trunk or one of its most important arms, the railroad across this State is destined to be an important link in the general line of travel towards the Pacific. The expenditure which will be made here in constructing the link through this State entitles us on the other hand to expect that no favoritism will be shown to any more southern route,

but that we shall receive that encouragement from the government, in the shape of lands and a proper survey beyond the State line, which the large interests to be accommodated by this undertaking entitle us to expect.

The promise of a fair revenue on the road thro' this State is exceedingly encouraging. Besides the business which the rapid settlement of the country will create, we have the emigration to California, which is constantly increasing, and the passenger business and the best of the freight business of the upper Missouri, from near Independence, where it is understood the road will tap the river upwards. The rapidity of the current of the Missouri, the many shifting sand bars, and the number of trees and snags which encumber it, render its navigation very hazardous and tedious. The railroad has not, for its local business, to compete with a river such as the Hudson, nor even with a river such as the Mississippi, but with one much more tedious and dangerous than the last, on which steamboats rarely make an average time of six miles an hour. A traveller will be able to pass from the mouth of the Kansas to St. Louis in one day by the railroad, whereas it occupies him ordinarily four on the river and frequently a longer time.

Your obt. serv't.,
ST. LOUIS.

Improvement in Marine Propulsion.

A few days ago we had the opportunity of inspecting at Messrs. Johnson, Cammell, & Co.'s Cyclops Steel Works, a remarkable improvement effected in the machinery for propelling steam vessels. It is the invention of Mr. Macintosh, and is manufactured at the Cyclops Steel Works. The propellers hitherto in use have been invariably made from cast metal, and when at rest or in motion are a perfect screw, *always* at the same pitch. The improved flexible propeller [Mackintosh's], to which we refer, is made of steel well hammered and tempered and set at an angle on the revolving shaft. When at rest it is a perfect plane, but when in action it forms a screw, and, by the flexibility of the steel, assumes a finer or a coarser pitch according to the strength of the adverse action of the water through which it moves. This circumstance imparts to the vessel and machinery an easy action, especially in rough and heavy seas, which has never been attained in the rigid screws now in use. Propellers manufactured according to this patent are not more than half the weight of those made of cast metal, though the forgings are the largest yet attempted to be made from steel. It has been ascertained by experiment that in point of speed there is a gain of at least 20 per cent. In heavy seas or rough weather this propeller can be easily hoisted on board by means of a simple block and tackle, thus saving the expense of the machinery now used for raising the cast metal ones; and, from being malleable and tough, does away with the risk of breakage which necessarily ensues in the moving of a cumbersome piece of cast metal. In cost there is a saving of about fifty per cent.—This is considered to be one of the greatest improvements yet made in marine propulsion. Four of these propellers have already been made and brought into use, and as a proof of the high estimation in which they are held, it may be stated that the lords of the admiralty have ordered her Majesty's private yacht, "The Fairy," the swiftest vessel afloat, to be fitted out with one of these propellers in preference to the rigid screw. We understand that Messrs. Johnson, Cammell, and Co., have made arrangements with Mr. Mackintosh, the patentee, for exclusively manufacturing the propellers from three to eighteen feet in length.

Coal.

CUMBERLAND SEMI-BITUMINOUS COAL
superior quality for Locomotives, for sale by
H. B. TEBBETTS,
No. 40 Wall St., New York.
May 12, 1849.

RAILROAD CAR AND COACH TRIMMINGS.

Doremus & Nixon, IMPORTERS AND FURNISHERS

HAVE FOR SALE
Plain Garnet Plush. Fig. Garnet Plush (Butterfly pat.
"Crimson " "Crimson " (Elegant.
"Scarlet " " " (Gen. Taylor.

BROCADELLES.
Crimson Silk Brocadelles. Gold and Maroon do.
Gold and Blue " " Brown "
Silk and Wool " of every color.

MOQUETTES.
Of elegant designs and colors.
GERMAN CLOTH FOR CAR LININGS.

The most beautiful goods ever shown in this country, and the subscribers are the sole agents for the sale of them.

Oil cloths Enamelled with Gold. } These goods can be
" " Silver. } furnished in any
Do. Silver ground velvet printed. } dimensions req'd.

CURLED HAIR
Of every description and quality.
JNO. W. A. STRICKLAND, Agent.
New York, 1850. 1y16

FARMERS! ATTENTION!!

John Mayher & Co's NEW AGRICULTURAL WAREHOUSE AND SEED STORE.

197 WATER STREET, NEW YORK.
Where they have for Sale, the largest and most complete assortment of Farming Implements, ever offered for sale in this city—all of which they will sell 10 per cent. Cheaper than the same kind of Goods can be bought at any other house in the city. Our Goods are all warranted to give satisfaction.

FARMERS wanting to purchase, will please call and examine our Stock before buying elsewhere. Among our assortment may be found the Celebrated Highest Premium Eagle Ploughs! together with all the most approved Ploughs now in use.

Also—Horse Powers, Threshing Machines, Fan Mills, Corn Shellers, Straw Cutters, Corn Mills, Seed Sowers, Churns, Ox Yokes, Ox Scrapers, Hay Rakes, Horse Rakes, Patent Chain Pump (that never freezes nor rusts), and other Pumps; in fact we have everything for Farming Purposes—together with Guano, Bone Dust and other Fertilizers.

JOHN MAYHER & CO.
197 Water st., N. Y.

February 9, 1850.
N.B.—J. M. & Co. also continue their Old Stand, at 195 Front street, near Fulton Market.

MINING AGENCY.
Capt. O. H. Matthews,
Civil and Mining Engineer, F. G. S., London, etc.

HAVING completed his three years engagement on Lake Superior, is open to negotiate for another appointment as Mining Agent, or Superintendent of Mines. Also, to give his opinion and advice upon Mineral Lands, to Buyers and Sellers of Stock, or to be consulted on any section in this important branch of national industry.

The most implicit confidence may be relied on, and immediate attention given to all communications (pre paid). Address Capt. O. H. Matthews, Toronto, July 27th, 1850. 3m

**Ogden & Martin's
ROSENDALE CEMENT.**
WE are prepared to enter into arrangements for supplying our Cement for public works or other purposes. We warrant the cement equal in every respect to any manufactured in this country. It attains a great degree of hardness, sets immediately under water, and is a superior article for masonry coming in contact with water, or requiring great strength.

For sale in tight barrels, well papered, at their office by
OGDEN & MARTIN, 104 Wall st.
February 16, 1850. 1y*

The above cement is used in most of the fortifications building by government.

Railroad Iron.
OF ANY PATTERN AND WEIGHT,
Of a Favorite Brand,
And deliverable in Bond, or Duty paid, at any Port of the U. S., contracted for on favorable terms, by
CHARLES ILLIUS,
20 Beaver St., New York.

Pig and other Iron also contracted for. Sole Agent for "Barter's Machine and Burning Oil"—particularly adapted for "Railroads" and other Machinery—Preferred to Sperry by the many now using it, and 25 per cent. cheaper.

Gloucester Iron Works, GLOUCESTER, NEW JERSEY, NEARLY OPPOSITE PHILADELPHIA.

THE subscribers having made extensive alterations in their works, are now prepared to receive orders for all kinds of Stationary and Marine Engines, Boilers, Locomotives, Sugar Mills, and every description of Mill Work.

Also—Orders for Iron and Brass Castings executed with despatch.

Having secured the valuable services of Mr. David Matthew as Superintendent (who has been for five years foreman in the Iron Works of John Watchman, now the Vulcan Works, Baltimore, and for 12 years superintendent of the Mohawk and Hudson and the Utica and Schenectady Railroads, New York,) they feel confident that all orders entrusted to them will be faithfully executed.

Having an extensive Wharf in front of their works, it will afford a safe harbor for all classes of steam vessels that may require repairs during the winter.

C. M. & J. C. SITER.
Gloucester, July 24, 1850. 1m.

Ray's Patent India Rubber Car Springs.

Savannah, Ga., May 22, 1850.

FOWLER M. RAY, Esq.,
Dear Sir: I have no hesitation in saying, after having used on our road your springs and Fuller's, that I consider yours decidedly the best in every particular, and in this opinion I am sustained by all our officers. Fuller's spring has a tendency to split, and also to chafe or abrade by the constant friction on the cast iron plates or disc: and in my opinion is not near so elastic as yours.

Your springs, which have been in use on our road for 12 or 15 months past, and in constant use under both passenger and freight cars, are to all appearances as elastic, sound and good, as when first put in use.

We are now building eighty-five new cars, of which for fifty-sets the springs have been ordered of you.

GEORGE A. ADAMS,
Master Carpenter,
Central Railroad and Banking Co. of Georgia.

Connecticut River Railroad Office,
Northampton, May 4, 1850. }

E. CRANE, Esq.,
Dear Sir: It is now about two years since I first tried the experiment of using a set of Ray's India-rubber Springs upon one of our merchandise cars, and although the car has been in constant service since that time, I do not on examination find the slightest difference either in the thickness or elasticity of the material.

The same result has followed wherever we have applied them, either for wheel or draw springs on Engines, Tenders or Cars. At present we use no other; either in replacing old springs or building new cars—and I am perfectly satisfied that for economy, durability, safety, and ease of motion, that Ray's India-rubber is the best article for Springs which has been presented to the public.

Yours respectfully, **J. HUNT,**
Supt. Connecticut River Railroad.

EDWARD CRANE, Esq.,

Dear Sir: Having applied to cars of the Boston and Worcester Railroad Corporation, Ray's Vulcanised Rubber Springs (where they have been in use for some two years last past), I have had occasion to observe their operation, and am free to say in answer to your inquiries, that they retain their elasticity perfectly during all changes of atmospheric temperature: and are in my opinion a most valuable acquisition to Railroad Cars—are not liable to derangement, as is the case with steel springs; while at the same time it costs less to apply them. Respectfully yours,

D. N. PICKERING,
Supt. Motive Power, Bost. & Wor. Railroad.
Boston, April 15th, 1850.

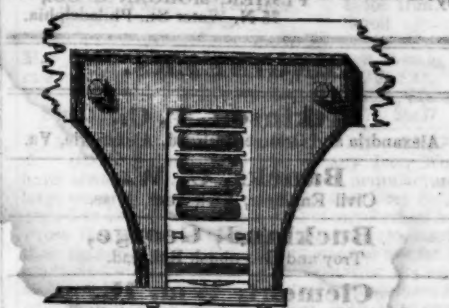
Ibbotson, Brothers & Co's CELEBRATED CAST STEEL

AND
Best Cast Steel Royal Improved Files, well known as better adapted for Engineers' and Machinists' purposes than any now in use in the United States.

Every description of Square, Octagon, Flat and Round Cast Steel, Sheet, Shovel and Railway Spring Steel, etc., and Steel to order for any purposes—manufactured at their works in Sheffield—and universally known by the old stamp "Globe."

HENRY J. IBBOTSON, Agent,
218 Pearl st., New York.

FULLER'S PATENT INDIA RUBBER SPRING.



THESE SPRINGS ARE THE CHEAPEST, the lightest and most durable of any yet known. They are easily applied to new or old cars, and there is small possibility of any accident occurring to them.

Other parties through Mr. Ray set up claims to an India Rubber Spring which, though the same in principle, is very inferior in its working and durability. Actions are in progress for an Infringement on Fuller's Patent against parties using that Spring.

The superiority of Fuller's Spring over that claimed by Mr. Ray is fully established and has frequently been testified to. The following are from gentlemen who have had much experience with both Springs.

"It will afford me pleasure to recommend your springs to the companies in this region, in preference to Ray's which I am confident are inferior in mechanical arrangement to yours."
JOHN M'RAE,
Engineer S. Carolina R. R., Charleston.

"I do not hesitate to allow you to say that I concur in Mr. M' Rae's opinion that Ray's springs are inferior in mechanical arrangement to Fuller's. I repeatedly expressed that opinion long before Mr. M' Rae had seen your springs (as I believe) and entertain it still."
WM. PARKER,
Gen'l Supt. of Baltimore and Ohio R. R.

Office of Supt. Norwich & Worcester R.R. Co. }
December 26, 1849. }

"I most fully concur in the opinion of Jno. M' Rae, Engineer of S. Carolina Railroad, that Ray's Springs are inferior to Fuller's Springs; and shall with pleasure recommend them to all Railroad Companies for adoption. I have used both springs on this road and have no hesitation in saying that I should in all cases prefer Fuller's Spring."

SAM'L H. P. LEE, JR.,
Supt. and Engineer.

Office B. & P. R. R. Co. }
Boston, 20th December, 1849. }

"This company have cars fitted up with both Ray's and Fuller's 'Metallic India Rubber Springs,' and I do not hesitate to say that Fuller's arrangement is very much superior to Ray's."

W. RAYMOND LEE, Supt.

The following result has been obtained by experiment upon one railroad.

A set of Trucks fitted with Steel Springs cost \$190.77 and weigh 2355 lbs. The same with Fuller's Springs, 131.71 " 1911 lbs.

Difference, \$59.06 " 444 lbs.

Not only is there an advantage in the cost, but owing to the great reduction in weight, the car can be made lighter throughout, and so an enormous saving in weight may be effected in a Train.

AGENTS.
G. M. KNEVITT, 38 Broadway, N. Y.,
JOHN THORNLEY, 110 Chestnut St., Philad.
The BOSTON BELTING CO., Milk st., Boston.
January 2, 1850.

American Cast Steel.

THE ADIRONDAC STEEL MANUFACTURING CO. is now producing, from American iron, at their works at Jersey City, N.J., Cast Steel of extraordinary quality, and is prepared to supply orders for the same at prices below that of the imported article of like quality. Consumers will find it to their interest to give this a trial. Orders for all sizes of hammered cast steel, directed as above, will meet with prompt attention.

May 28, 1849.

CUT NAILS OF BEST QUALITY, BAR IRON
(including Flat Rails) manufactured and for sale
by **FISHER, MORGAN & CO.,**
75 N. Water St., Philadelphia.

ENGINEERS.

Atkinson, T. C.,
Alexandria and Orange Railroad, Alexandria, Va.

Bancks, C. W.,
Civil Engineer, Vicksburg, Miss.

Buckland, George,
Troy and Greenbush Railroad.

Clement, Wm. H.,
Little Miami Railroad, Cincinnati, Ohio.

Cozzens, W. H.,
Engineer and Surveyor, St. Louis, Mo.

Alfred W. Craven,
Chief Engineer Croton Aqueduct, New York.

Davidson, M. O.,
Eckhart Mines, Alleghany Co., Maryland.

Fisk, Charles B.,
Cumberland and Ohio Canal, Washington, D. C.

Felton, S. M.,
Fitchburg Railroad, Boston, Mass.

Floyd-Jones, Charles,
South Oyster Bay, L. I.

Gzowski, Mr.,
St. Lawrence & Atlantic Railroad, Montreal, Canada.

Gilbert, Wm. B.,
Rutland and Burlington Railroad, Rutland, Vt.

Grant, James H.,
Nashville and Chattanooga R. R., Nashville, Tenn.

S. W. Hill,
Mining Engineer and Surveyor, Eagle River,
Lake Superior.

Holcomb, F. P.,
Southwestern Railroad, Macon, Ga.

Johnson, Edwin F.,
New York and Boston Railroad, Middletown Ct.

Latrobe, B. H.,
Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,
Worcester and Nashua Railroad, Worcester, Mass.

Morris, Elwood,
Schuylkill Navigation, Schuylkill Haven, Pa.

Morton, A. C.,
Atlantic and St. Lawrence Railroad, Portland, Me.

McRae, John,
South Carolina Railroad, Charleston, S. C.

Nott, Samuel,
Lawrence and Manchester Railroad, Boston.

Prichard, M. B.,
East Tennessee and Georgia R. R., Cleveland, Tenn.

Roebbling, John A.,
Trenton, N. J.

W. Milnor Roberts,
Bellefontaine and Indiana Railroad, Marion, Ohio.

Roberts, Solomon W.,
Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Sanford, C. O.,
South Side Railroad, Virginia.

Schlatter, Charles L.,
Northern Railroad (Ogdensburg), Malone, N. Y.

Sours, Peter,
Rahway, New Jersey.

Stark, George,
Bost., Con. and Mont. R. R., Meredith Bridge, N. H.

Steele, J. Dutton,
Pottstown, Pa.

Trautwine, John C.,
Panama Railroad—Address through office of Panama
Railroad Co., 78 Broadway, N. Y.

Trimble, Isaac R.,
Philad., Wil. & Baltimore Railroad, Wilmington, Del.

Tinkham, A. W.,
United States Fort, Bucksport, Me.

Thomson, J. Edgar.,
Pennsylvania (Central) Railroad, Philadelphia.

Troost, Lewis,
Alabama and Tennessee Railroad, Selma, Ala.

Whipple, S.,
Civil Engineer and Bridge Builder, Utica, N. Y.

Williams, E. P.,
Auburn and Schenectady Railroad, Auburn, N. Y.

Williams, Charles H.,
Milwaukee, Wisconsin.

HOTELS.

Exchange Hotel,
Adjoining Eastern Railroad Depot,
BUFFALO, N. Y.
BY.....**FISK & SPERRY,**
Late of Delevan House, Albany.

J. D. Abraham, Architect,
NO. 300 MAIN STREET,
BUFFALO, N. Y.

Fountain Hotel,
LIGHT STREET, BALTIMORE,
P. THURSTON.....Proprietor.

DUNLAP'S HOTEL,
On the European Plan,
NO. 135 FULTON STREET,
Between Broadway and Nassau St.,
NEW YORK.

MANSION,
Corner of Maine and Exchange Streets,
P. DORSHIMER. BUFFALO.

GUY'S
United States Hotel,
(Opposite Pratt street Railroad Depot.)
BALTIMORE.
JOHN GUY. WILLIAM GUY.

American Hotel,
Pratt street, opposite the Railroad Depot, -
BALTIMORE.
HENRY M. SMITH.....Proprietor.
Late of the Exchange & St. Charles Hotels, Pittsburg.

Washington Hotel,
BY JOHN GILMAN,
\$1 Per Day.
No. 206 Pratt street, (near the Depot.)
BALTIMORE.

Barnum's City Hotel,
MONUMENT SQUARE, BALTIMORE.
This Extensive Establishment, erected expressly
for a Hotel, with every regard to comfort and conven-
ience, is situated in the centre and most fashionable
part of the city, and but a few minutes' walk from the
Railroad Depots and Steamboat Landings.
The House has lately undergone a thorough repair,
embracing many valuable improvements, and will ac-
commodate 250 Guests. BARNUM & CO.

JONES' HOTEL,
NO. 152 CHESTNUT STREET,
PHILADELPHIA.
BRIDGES & WISE, Proprietors.

BUSINESS CARDS.

Lithography.
JOHN P. HALL & CO.,
161 Main st., Buffalo, (Commercial Advertiser Build.)
Are prepared to execute all kinds of Lithography
in good style and at reasonable rates. Particular at-
tention will be paid to Engraving Railroad Maps, En-
gineer's Plans and drafts, etc., and orders in this line
are respectfully solicited.

J. T. Hodge
Will attend to the examination of mining tracts near
Lake Superior, and prepare Reports and Maps.
Address, during the Summer,
Ontanagon Postoffice, Lake Superior.

Cumberland Steam Coal,
FROM THE
FROSTBURG MINES, MD.
H. A. TUCKER,
Agent of Frostburg Coal Co.
No. 50 Wall Street, New York.

Eaton, Gilbert & Co.,
Railroad Car, Coach and Omnibus Builders,
TROY, N. Y.

Nathan Caswell,
METAL BROKER, 69 WALL ST., N.Y.
For the Purchase and Sale of Railroad Iron (new and
old,) Boiler Plates, Pig and Bar Iron, Lead, Tin, Cop-
per, Spelter, etc. Refers to
Messrs. Boorman, Johnston, & Co., New York.
" Grinnell, Minturn & Co., "
" Barston, Pope & Co., "
" Earps & Brink, Philadelphia.
" E. Pratt & Brother, Baltimore.
John Barstow, Esq., Providence.
Lewis Bullard, Esq., Boston.
February 9, 1850. 6m*

United States Railroad Guide
and Steamboat Journal.
CONTAINING OFFICIAL TIME ADVERTISEMENTS,
Tables of Stations, Distances, Fares, Time, etc.,
with much miscellaneous matter for the travelling pub-
lic. Price 12 cents a copy. Yearly subscription \$1.
Published at 43 Ann street, New York.

STEEL AND FILES.
R. S. Stenton,
20 CLIFF STREET, NEW YORK,
AGENT FOR
J. & Riley Carr's
BAILEY-LANE WORKS, SHEFFIELD,
Manufacturers of Cast, Shear, German and Blister
STEEL
Of all descriptions. Warranted Good
FILES.
Manufacturers of Machinists' Warranted Best Cast
Steel Files, expressly for working upon Iron and Steel,
made very heavy for recutting.
A full Stock of Steel and Files at all times on
hand. 6m4

Walter R. Johnson,
CIVIL AND MINING ENGINEER AND AT-
torney for Patents. Office and Laboratory, F St.,
opposite the Patent office, Washington, D. C.

Dudley B. Fuller & Co.,
IRON COMMISSION MERCHANTS,
No. 139 GREENWICH STREET,
NEW YORK.

Manning & Lee,
GENERAL COMMISSION MERCHANTS,
NO. 51 EXCHANGE PLACE,
BALTIMORE.
Agents for Avalon Railroad Iron and Nail Works.
Maryland Mining Company's Cumberland Coal 'CED'
—'Potomac' and other good brands of Pig Iron.

Cop Waste.
CLEAN COP WASTE, suitable for cleaning Rail-
road, Steamboat and Stationary Engines, con-
stantly on hand and for sale by
KENNEDY & GELSTON,
54 Pine St., New York.
October 27, 1849, 3m

**Railroad Car Manufacturer's
Furnishing Store.****F. S. & S. A. MARTINE,**

IMPORTERS AND MANUFACTURERS OF

**RAILROAD CAR &
CARRIAGE LININGS,**PLUSHES, CURTAIN MATERIALS, ETC.,
112 WILLIAM ST., NEAR JOHN.
3-4 and 6-4 Damasks, Union and Worsted; Mo-
reens, Rattinetta, Cloths, Silk and Cotton Velvets,
English Bunting**Samuel Kimber & Co.,
COMMISSION MERCHANTS**WILLOW ST. WHARVES, PHILADELPHIA.
AGENTS for the sale of Charcoal and Anthracite
Pig Iron, Hammered Railroad Car and Locomo-
tive Axles, Force Pumps of the most approved con-
struction for Railroad Water Stations and Hydraulic
Rams, etc., etc.
July, 27, 1849.**James Herron, Civil Engineer,**OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA,

PATENTEE OF THE

HERRON RAILWAY TRACK.Models of this Track, on the most improved plans,
may be seen at the Engineer's office of the New York
and Erie Railroad.**To Railroad Companies.****—WROUGHT IRON WHEELS—
SAFETY AND ECONOMY.****NORRIS' LOCOMOTIVE WORKS,
SCHENECTADY, NEW YORK,**Are Manufacturing Wrought Iron Driving, Truck,
Tender, and Car Wheels—made from the best Ameri-
can Iron. Address E. S. NORRIS.
May 16, 1849.**George O. Robertson,
BROKER IN SCOTCH AND
AMERICAN PIG IRON;**Bar Iron, Lead, Spelter, Tin, Copper, etc.,
No. 4 Liberty Place, MAIDEN LANE,
(Near Broadway.)
NEW YORK**Manufacture of Patent Wire
ROPE AND CABLES,**For Inclined Planes, Suspension Bridges, Standing
Rigging, Mines, Cranes, Derrick, Tillers, &c., by
JOHN A. ROEBLING, Civil Engineer,
TRENTON, N. J.**Doremus & Harris,
ANALYTICAL & CONSULTING CHEMISTS,
179 BROADWAY, NEW YORK.
SCHOOL OF CHEMISTRY.****To Engineers and Surveyors.**E. BROWN AND SON Mathematical inst. mak-
ers No. 27 Fulton Slip, New York, make and keep
for sale, Theodolites, Levelling inst., Levelling rods,
Surveyors Compasses, and Chains, Cases of Mathe-
matical drawing insts. various qualities, together with
a general assortment of Ivory Scales and small insts.
generally used by Engineers.**Ranstead, Dearborn & Co.,
MANUFACTURERS OF
LOCOMOTIVE CRANKS AND CAR AXLES,**

ALSO

**WROUGHT IRON SHAFTING,
And All Kinds of Hammered Shapes.**
Forge at Commercial Point, Dorchester,
Office 25 Foster's Wharf, opposite No. 211 Broad St.
BOSTON.**Henry J. Ibbotson,
IMPORTER of Sheffield and Birmingham Goods.**
Also, Agent for the Manufacture of Telegraph
Wire.
218 PEARL ST., NEW YORK.**Cumberland, (Md.) Coals for
Steaming, etc.****ORDERS RECEIVED FOR AND FILLED
by J. COWLES, 27 Wall St., N. Y.****Samuel D. Willmott,
MERCHANT, AND MANUFACTURER OF
CAST STEEL WARRANTED SAWS,
—AND FILES—
IMPORTER OF THE
GENUINE WICKESLY GRINDSTONES
NO. 8 LIBERTY STREET,
NEW YORK.****IRON.****Railroad Iron.****3,000 TONS C. L. MAKE** 63½ lbs. per yard,
now landing and to arrive.Also contracts made for future delivery of above su-
perior make English Iron.300 Tons Banks Best Iron, Round, Square and Flat.
200 " English Bar " " " "10 " 9-16 Square Iron for Railroad Spikes.
For sale in lots to suit purchasers by
DAVID W. WETMORE.
New York, March 26, 1850. 3m**Railroad Iron.**THE Undersigned, Agents for Manufacturers, are
prepared to contract to deliver Rails of superior
quality, and of any size or pattern, to any ports of dis-
charge in the United States.COLLINS, VOSE & CO.,
74 South St.

New York, June 1, 1850.

Railroad Iron.

1,500 Tons weighing 58 lbs. per lineal yard.

500 " " 57 " " "
500 " " 56 " " "
500 " " 60 & 61 lbs. "Also 2½ flat rails. All the above being of approv-
ed patterns. For sale byDAVIS, BROOKS, & CO.,
68 Broad street.N.B.—Rails imported on commission, or at a fixed
price.**Iron.**Pig Iron, Anthracite and Charcoal; Boiler and Flue
Iron, Spring and Blistered Steel, Nail Rods, Best Re-
fined Bar Iron, Railroad Iron, Car Axles, Nails, Stove
Castings, Cast Iron Pipes of all sizes, Railway Chairs
of approved patterns for sale by
COLEMAN, KELTON & CAMBELL,
109 N. Water St., Philadelphia.**IRONDALE PIG METAL, MANUFACTURED
and for sale by the Bloomsburg Railroad Iron Co.
LINDLEY FISHER, Treasurer.
75 N. Water St., Philadelphia.****Railroad Iron.****2000 Tons,** weighing 58 pounds per lineal yard,
of the most approved pattern of T rails, in
store and to arrive, for sale byCOLLINS, VOSE & CO.,
74 South St.

New York, June 1, 1850.

Railroad Iron.**1675 Tons,** weighing about 61 lbs. per yard, 90
tons, weighing about 52 lbs. per yard, and
825 tons, weighing about 53½ lbs. per yard, of the lat-
est and most approved patterns of T rail, for sale by
BOORMAN, JOHNSTON & CO.,
119 Greenwich street.

New York, Feb. 25, 1850.

N.B.—B. J. & Co are also prepared to take con-
tracts for English rails, delivered in any of the Atlan-
tic ports of the United States.**Railroad Iron.**THE UNDERSIGNED, HAVING made arrange-
ments abroad, are prepared to contract for the de-
livery of Foreign rails, of approved brands upon the
most favorable terms.They will also make contracts for American rails,
made at their Trenton works, from Andover Iron, in
whole or in part, as may be agreed upon.They are prepared to furnish Telegraph, Spring and
Market Wire; Braziers and Wire Rods; Rivets and
Merchant Bars to order, all made exclusively from An-
dover Iron. The attention of parties who require iron
of the very best quality for special purposes, is respect-
fully invited.COOPER & HEWITT,
17 Burling Slip, New York.

February 15, 1850.

Glendon Refined Iron.Round Iron, Band Iron, Hoop Iron,
Square " Flat " Scoll "

Axles, Locomotive Tyres,

Manufactured at the Glendon Mills, East Boston, for
sale by **GEORGE GARDNER & CO.,**
5 Liberty Square, Boston, Mass.

Sept. 15, 1849.

3m37

**PATENT HAMMERED RAILROAD, SHIP &
BOAT SPIKES.**—The Albany Iron Works
have always on hand, of their own manufacture, a
large assortment of Railroad, Ship and Boat Spikes
from 2 to 12 inches in length, and of any form of head.
From the excellence of the material always used in
their manufacture, and their very general use for rail-
roads and other purposes in this country, the manu-
facturers have no hesitation in warranting them fully
equal to the best spikes in market, both as to quality
and appearance. All orders addressed to the subscrib-
ers at the works will be promptly executed.**JOHN F. WINSLOW, Agent.**Albany Iron and Nail Works, Troy, N. Y.
The above Spikes may be had at fact:ry prices, of
Erastus Corning & Co Albany; Merritt & Co., New
York; E. Pratt & Brother, Baltimore, Md.**LAP—WELDED
WROUGHT IRON TUBES**

FOR

TUBULAR BOILERS,FROM ONE AND A QUARTER TO SEVEN
INCHES IN DIAMETER.THE ONLY Tubes of the same quality and man-
ufacture as those so extensively used in England,
Scotland, France and Germany, for Locomotive, Ma-
rine and other Steam Engine Boilers.**THOMAS PROSSER & SON, Patentees,**
28 Platt street, New York.**Railroad Iron.**THE UNDERSIGNED ARE PREPARED TO
contract for the delivery of English Railroad Iron
of favorite brands, during the Spring. They also re-
ceive orders for the importation of Pig, Bar, Sheet, etc.
Iron.**THOMAS B. SANDS & CO.,**

22 South William street,

February 3, 1849.

New York.

Iron Store.THE Subscribers, having the selling agency of the
following named Rolling Mills, viz: Norristown,
Rough and Ready, Kensington, Triadelphia, Potta-
grove and Thorndale, can supply Railroad Companies,
Merchants and others, at the wholesale mill prices for
bars of all sizes, sheets cut to order as large as 58 in.
diameter; Railroad Iron, domestic and foreign; Loco-
motive tire welded to given size; Chairs and Spikes;
Iron for shafting, locomotive and general machinery
purposes; Cast, Shear, Blister and Spring Steel; Boil-
er rivets; Copper; Pig iron, etc., etc.**MORRIS, JONES & CO.,**

Iron Merchants,

Schuylkill 7th and Market Sts., Philadelphia.
August 16, 1849. ly33**Railroad Iron.**THE MOUNT SAVAGE IRON WORKS, AL-
legany county, Maryland, having recently pass-
ed into the hands of new proprietors, are now prepar-
ed, with increased facilities, to execute orders for any
of the various patterns of Railroad Iron. Communi-
cations addressed to either of the subscribers will have
prompt attention.**J. F. WINSLOW, President**

Troy, N. Y.

ERASTUS CORNING, Albany;**WARREN DELANO, Jr., N. Y.****JOHN M. FORBES, Boston****ENOCH PRATT, Baltimore, Md.**

November 6, 1848.

Railroad Iron.THE SUBSCRIBERS ARE PREPARED TO
take orders for Railroad Iron to be made at their
Phoenix Iron Works, situated on the Schuylkill Riv-
er, near this city, and at their Safe Harbor Iron Works,
situated in Lancaster County, on the Susquehanna
river; which two establishments are now turning out
upwards of 1800 tons of finished rails per month.Companies desirous of contracting will be promptly
supplied with rails of any required pattern, and of the
very best quality.**REEVES, BUCK & CO.**

45 North Water St. Philadelphia,

March 15, 1849.

Monument Foundry.

A. & W. DENMEAD & SON,
Corner of North and Monument Sts.,—Baltimore,
HAYING THEIR

IRON FOUNDRY AND MACHINE SHOP

In complete operation, are prepared to execute faithfully and promptly, orders for Locomotive or Stationary Steam Engines, Woolen, Cotton, Flour, Rice, Sugar Grist, or Saw Mills.

Slide, Hand or Chuck Lathes, Machinery for cutting all kinds of Gearing, Hydraulic, Tobacco and other Presses, Car and Locomotive patent Ring Wheels, warranted,

Bridge and Mill Castings of every description, Gas and Water Pipes of all sizes, warranted, Railroad Wheels with best faggotted axle, furnished and fitted up for use, complete

Being provided with Heavy Lathes for Boring and Turning Screws, Cylinders, etc., we can furnish them of any pitch, length or pattern.

Old Machinery Renewed or Repaired—and Estimates for Work in any part of the United States furnished at short notice.

June 8, 1849.

Iron Wire.

REFINED IRON WIRE OF ALL KINDS,
Card, Reed, Cotton-flyer, Annealed, Broom, Buckle, and Spring Wire. Also all kinds of Round, Flat or Oval Wire, best adapted to various machine purposes, annealed and tempered, straightened and cut any length, manufactured and sold by

ICHABOD WASHBURN.

Worcester, Mass., May 25, 1849.

Wheel, Forge and Foundry Iron.

LOCUST GROVE Wheel Iron of great strength and superior chilling property.

Balt. Charcoal Forge Iron, from Patuxent, Curtis Creek and Gunpowder furnaces.

Elkridge Foundry Iron, of superior strength and softness. Anthracite and Charcoal Iron from Pennsylvania and Virginia. Gas and Water Pipes, Lamp Posts from Elkridge furnace.

LEMMON & GLENN,

6m9

62 Buchanan's Wharf, Baltimore.

S. S. Keyser & Co., IRON WAREHOUSE,

Corner of South and Pratt Streets,
BALTIMORE, MD.

Selling Agents for the Rough and Ready Bar Iron and Elk Boiler and Flue Iron Rolling Mills, Sarah and Taylor Furnaces, and Wrightsville Hollow Ware Foundry, and Dealers in Bar and Sheet Iron, and Cast, Sheer, German, Blister, Spring and Electroplated Steel, etc., etc.

Smith & Tyson,

GENERAL COMMISSION MERCHANTS,
No. 25 South Charles St., Baltimore, Md.

AGENTS for the Celebrated Columbia Pig Iron, suitable for Car Wheels and Chilled Rolls. Columbia refined Charcoal Blooms; Refined Charcoal Junata Billet Iron for Wire; Refined Iron for Bridging, of great strength; Cut Nails, Spikes, and Brads; Railroad Spikes and Wrought Chairs. 22tf

Stickney & Beatty,

DEALERS IN IRON AND IRON MANUFACTURERS.

AGENTS for the Balt. City Rolling Mill, from which establishment they are prepared to furnish Ellicott's round, square, and flat bar iron, puddled and charcoal boiler plates and billet iron—also agents for the sale of the Laurel and Maryland (Balt.) charcoal forge pig iron, Balt. hard iron for chilling wheels, anti-steam nails, Catoctin foundry iron, boiler blooms from the Caledonian works, Wm. Jessop & Son's cast steel, Coleman's blister steel and nail rods, hoop, band, sheet, oval and common English iron.

Nos. 18 and 20 South Charles st., Baltimore.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

Iron.

THE SUBSCRIBERS having resumed the agency of the New-Jersey Iron Company, are prepared to execute orders for the different kinds and sizes of Iron usually made at the works of the company, and offer for sale on advantageous terms.—

150 tons No. 1 Boonton Foundry Pig Iron.
100 " No. 2 do. do. do.
300 " Nos. 2 & 3 Forge do. do.
100 " No. 2 Glendon do. do.
140 " Nos. 2 & 3 Lehigh Crane do do.
100 " No. 1 Pompton Charcoal do.
100 " New-Jersey Blooms
50 " New-Jersey Faggotted Iron, for shafts
Best Bars, $\frac{1}{2}$ to 4 inch by $\frac{1}{2}$ to 1 inch thick.
Do do Rounds and Squares, $\frac{1}{2}$ to 3 inch.
Rounds and Squares, 3-16 to 1 inch.
Half Rounds, $\frac{1}{2}$ to 1 in. Ovals & Half Ovals $\frac{1}{2}$ to $1\frac{1}{2}$ in.
Bands, $1\frac{1}{2}$ to 4 inch. Hoops, $\frac{1}{2}$ to 2 inch.
Trunk Hoops, $\frac{1}{2}$ to $1\frac{1}{2}$ in. Horse Shoes & Nut Iron.
Nail Plates. Railroad Spikes.

DUDLEY B. FULLER & Co., 139 Greenwich-st. and 85 Broad-st.

WILLIAM JESSOP & SONS' CELEBRATED CAST-STEEL.

The subscribers have on hand, and are constantly receiving from their manufactory,

PARK WORKS, SHEFFIELD,
Double Refined Cast Steel—square, flat and octagon.
Best warranted Cast Steel—square, flat and octagon.
Best double and single Shear Steel—warranted.
Machinery Steel—round.

Best and 2d gy. Sheet Steel—for saws and other purposes.

German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.

Genuine "Sykes" L Blister Steel.

Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by

WM. JESSOP & SONS,

91 John street, New York.

Also by their Agents—
Curtis & Hand, 47 Commerce street, Philadelphia.

Alex'r Fullerton & Co., 119 Milk street, Boston.

Stickney & Beatty, South Charles street, Baltimore.

May 6, 1849.

JOHNSON, CAMMELL & Co's Celebrated Cast Steel,

AND

ENGINEERING AND MACHINE FILES,
which for quality and adaptation to mechanical uses, have been proved superior to any in the United States.

Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cyclops Steel Works Sheffield.

JOHNSON, CAMMELL & CO.,

100 William St., New York.

November 23 1849.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract for the delivery of English, Welsh and Scotch Rails, of any pattern and weight, also for every description of Welsh, Scotch and Swedish Iron, Railway Chairs and Spikes, Rivets, Bolts, Nuts, Washers, Chain Cables, Anchors, Tin Plates, German Spelter, Iron Castings, and every description of Machinery.

WILLIAM BIRD & CO.,

Iron and Tin Plate Merchants,

44 Wall st., New York.

And at 5 Martin's Lane, London,

and 140 Buchanan st., Glasgow.

July 27th, 1850.

To the Proprietors of Rolling Mills and Iron Works.

THE Undersigned—Proprietors of Townsend's Furnace and Machine Shop, Albany—are extensively engaged in the manufacture of Machinery and fixtures for Iron, and Copper Rolling Mills, and Iron Works. Having paid particular attention to the manufacture of Rolls (Rollers), both chilled and dry-sand, they feel confident that they can execute orders for such castings in a satisfactory manner. And to give assurance of this, they beg leave to refer to the following named persons, proprietors and managers of some of the most extensive rolling mills in the country, viz: Jno. F. Winslow, J. Tuckerman, H. Burden, W. Burt, J. & J. Rogers, Salts & Co., J. B. Bailey, L. G. B. Cannon, Hawkins & Atwater, etc., etc.

F. & T. TOWNSEND,

Albany, August 18, 1849,

Railroad Iron.

B. O. Railway Tires, Railway Wheels, Scotch Pig Iron, Tin Plates and Banca Tin, Muntz's Patent Metal Sheathing, Baltimore Copper.

Contracts for Rails made on behalf of the manufacturers, for delivery at any ports in the United States, at fixed prices.

Bowling Tires and Tire Bars and Scotch Pigs imported to order.

Muntz's Ship-sheathing, and a general stock of Tin Plates and Banca Tin in store, and for sale by

RAYMOND & FULLERTON, 45 Cliff st.

Bowling Iron. Stamped B.O.

Railway Tire Bars Rivet Iron
Locomotive and other Axles Locomotive Frame do
Boiler Plates Bars,
and every other description of this superior Iron.

The subscribers, agents for the sale of Bowling Iron, are prepared to execute orders for importation, especially for railway and machinery uses, with despatch from the manufacturers.

RAYMOND & FULLERTON, 45 Cliff st.

Lovegrove's Patent Cast Iron Water and Gas Pipes.

THE Subscriber, the Inventor and Patentee of the Centrifugal mode of giving form to metallic substances while in a molten state, is preparing to make Cast Iron Water and Gas Pipes, of any dimensions, at prices much lower than they can be made in the old manner, and the pipes warranted to stand a pressure of three hundred pounds to the square inch, and to be soft enough to drill. Steam Engines and all kinds of machinery. Cast Iron Doors and Frames, and Mill Castings of every description, made to order.

THOMAS LOVEGROVE,

Machinist and Founder,

West Falls Avenue, below Pratt st., Baltimore.

Rosendale Cement.

THE NEWARK AND ROSENDALE LIME AND CEMENT CO. are now manufacturing at their works in NEWARK, N. J., and Ulster county, N. Y., a very superior article of *Hydraulic Cement*—also Lime Calcine Plaster, etc. Contractors and dealers will find it to their advantage to call or make application before purchasing elsewhere. All communications addressed to the subscriber, at Newark, N. J., will be punctually attended to.

1y*15

HENRY WILDE, Secretary.

Railroad Instruments.

THEODOLITES, TRANSIT COMPASSES, and Levels, with Fraunhoffer's Munich Glasses, Surveyor's Compasses, Chains, Drawing Instruments, Barometers, etc., all of the best quality and workmanship, for sale at unusually low prices, by

E. & G. W. BLUNT,

No. 179 Water St., cor. Burling Slip.

New York, May 19, 1849.

American Railway Guide, AND POCKET COMPANION FOR THE UNITED STATES;

CONTAINING Correct Tables, showing the time for starting of trains from all stations, distances, fares, etc., on all the Railway lines in the U. States; also many of the principal Steamboat and Stage routes—accompanied by a complete **RAILWAY MAP.** Price, single copies 12 $\frac{1}{2}$ cts., or \$1 per annum. Published on the first of every month, corrected from returns furnished by the Railway Superintendents throughout the Union.

This book has been compiled somewhat on the plan of Bradshaw's Guide, with such improvements in size, form and arrangement as have seemed desirable; and the publisher confidently hopes it will not be found liable to the objections of incompleteness and incorrectness, which have been made, and justly too, against various other similar works heretofore issued.

The subscriber having had the management of the **NEW YORK PATHFINDER** almost from its commencement, has enjoyed superior facilities in obtaining information relating to the thoroughfares of travel, and is therefore well qualified to prosecute with success the arduous undertaking of furnishing a complete and correct national guide book.

STRINGER & TOWNSEND, General Agents, 222 Broadway: and sold also by Booksellers and Periodical Dealers generally throughout the country; also on all the Railways and Steamboats.

CURRAN DINSMORE, Publisher.

N. Y. Pathfinder Office,
138 Fulton St., New York City.

Great American Engineering

AND MECHANICAL WORK, just published in medium folio, 75 cts. to Subscribers, One Dollar to non-subscribers.

Part VI of "Specimens of the Stone, Iron and Timber Bridges, Viaducts, Tunnels, &c. &c. of the United States Railroads." By George Duggan, Architect and Civil Engineer.

The present part contains beautifully executed plans, elevations and sections of the Timber Bridge (three spans of 150, and one span of 160 feet) across the Delaware at Saw Mill Rift, on the line of the N. York & Erie R. R., with the specifications, estimates, bills of timber, iron, etc.

N.B.—With the present (6th) part, are given specimen Plates of the APPENDIX, (or "THEORETICAL AND PRACTICAL TREATISE ON BRIDGE BUILDING, etc. etc.") consisting of plans, elevations, sections and details of a cast iron oblique arch, 130 feet span, across Fairfield st. Manchester, on the line of the Manchester and Birmingham Railroad. Also a specimen sheet of the letter press of the APPENDIX, consisting of an introductory article on the Application of Iron to Railroad Structures.

"It is a work that was a great desideratum, and must prove of great benefit to the engineering profession generally, and especially to the tyro in practical engineering and mechanical knowledge; in truth it strikes us, that it would require years of labor and patient toil on the part of a young engineer to prepare the drawings, and collect the information that will be embodied in this work, and can now be secured for the trifling sum of \$9"—[Scientific Amer. March 16, 1850.]

In connection with this subject (Iron Railroad Structures) we take occasion to call attention again to Mr. Duggan's valuable and expensive publication, exhibiting drawings, with full descriptions of the various stone, iron and wooden bridges, viaducts, tunnels, culverts, etc., of all the Railroads in the United States. Mr. Duggan is an accomplished Architect and Civil Engineer, who came from Ireland to this country to exercise his profession; but finding Railroad construction here, in many respects, different from that he had been accustomed to in Europe, he applied himself to the study of our system; and the fruits of his researches and investigations embodied in this work, are well calculated to meet the exigencies of engineers, and to assist draughtsmen, bridge builders, mechanics and students.—[N. Y. Journal of Commerce, Feb. 14, 1850.]

Published by **GEORGE DUGGAN,**
300 Broadway, New York.
To whom all communications should be addressed, and subscriptions forwarded.

FOWLER M. RAY'S Patent India-rubber Railroad CAR SPRING.

New York and Erie Railroad Shops.
Piermont, March 26, 1850.

This will certify that from practical experience in the use of Fowler M. Ray's India rubber Car Springs, I believe them to be far superior to any others now in use.

I have never known them to be affected by any change of temperature, as other Rubber Springs have been affected on this road.

I am at the present time repairing a Passenger Car that Mr. Ray and myself mounted with his springs about two years and eight months since.

The springs are at the present time as perfect, to all appearances, as when first applied to the car.

Respectfully yours,
HORACE B. GARDNER,
Foreman of the Car Shops.

Supt. Office N.Y. & H. R.R.,
New York, March 8, 1850.

This is to certify that we have used the Rubber Springs manufactured by Mr. F. M. Ray for the past twenty months, "both for Passenger and Freight Car Springs and Bumpers, and of different sizes," and have in every case given entire satisfaction, and I consider them the best spring now in use.

M. SLOAT, Supt.

Boston, March 5, 1850.

In answer to your enquiry about India-rubber Springs, I have to say that we have used them to a considerable extent on both freight and passenger cars, and also on several of our tenders; and I am very well satisfied that they answer all the purposes for which they are intended. I believe the India-rubber will soon supersede all other springs for cars and tenders.

Yours truly,
S. M. FELTON,
Supt. Fitchburg Railroad.

Office New Jersey Railroad Co.,
Jersey City, March 8, 1850.

FOWLER M. RAY, Esq.,
Dear Sir: In answer to your enquiries respecting the operation of the Vulcanised Rubber Springs, purchased by our company from you some two years since, I reply that they are superior to any spring in use, (that I have either seen or heard of).

The improved form of your spring, consisting of a solid piece of vulcanised rubber with bands on the outside, is far superior to your first form, consisting of disks of rubber with metallic plates interposed.

The last named form was tried, if you recollect, at a much earlier period; and then was replaced by your last form.

I have no hesitation in saying that your springs have given entire satisfaction, and most cheerfully recommend them to railroad companies throughout the country for the following reasons:

- 1st. The cost is 30 per cent. less.
- 2d. Saving of weight on each car of 8 wheels from 700 to 900 lbs.
- 3d. Less care and attention is required, as they are not liable to get out of repair.
- 4th. A great saving is secured in the wear and tear of the cars and rails from their great elasticity.
- 5th. The freedom from noise.
- 6th. There is greater safety in case of accident, as they cannot be broken.
- 7th. The comfort of passengers is enhanced sufficiently to pay the expense, waiving all the other reasons that I have given.

Should this fail to satisfy any person enquiring, you are at liberty to refer to me, No. 150 Washington St., Jersey City.

Yours respectfully,
T. L. SMITH, Supt.

New York, March 11, 1850.

I have used the Patent India-rubber Spring purchased of Mr. Ray, upon the cars of the New York and New Haven Railroad, and have found them efficient and economical; and when applied to the axles and draw springs, believe them to be quite equal to any in use. I have found a combination of these springs with a steel spring under the transom beam a very satisfactory arrangement, and am now using this plan in all new cars.

Yours respectfully,
ROBERT SCHUYLER.

February 25, 1850.

From practical observation of the use of the India-rubber Car Springs, manufactured and sold by your company, we are entirely satisfied in their application, and do not hesitate to recommend them as elastic, durable, requiring no repairs for years, and retaining their consistency during all extremes of weather. We have applied them for the past two years, and consider them superior for all railroad purposes.

Yours truly,
OSGOOD BRADLEY, Car Builder, Worcester.
T. & C. WASON, do. Springfield.
DEAN, PACKARD & MILLS, do. do.
DAVENPORT & BRIDGES, do. Cambridgeport.

Office of the New Jersey Railroad Co.,
Jersey City, March 7, 1850.

This is to certify that we have had Mr. F. M. Ray's India-rubber Springs in constant use under our cars, and as Bumper Springs for upwards of two years, and they have in every way given perfect satisfaction.

The present form of spring we deem far superior to the form of Disk, having used both forms, although we have none of those made in Disks at present in use.

We take pleasure in recommending these springs to all railroad companies.

J. P. JACKSON, Vice Prest.
New Jersey Railroad and Trans. Co.

Roxbury, February 28, 1850.

In compliance with your request, I take great pleasure in stating the result of my experience in the use of "Ray's Patented Vulcanised India-rubber Car and Engine Springs." We have used them nearly two years, and never had one fail in any way. The cold weather does not affect them, as it has other rubber springs we have used.

With sixteen years' experience as superintendent of machinery on the Boston and Providence railroad, I take pleasure in saying that your springs are the best we ever used, or I ever saw used elsewhere. We have 20 cars rigged with them, of which I can say that the springs are as good now as when first applied. I put 24 lbs. of the rubber under the forward end of one of our heaviest engines, taking off 250 lbs. of steel springs—it has been in use 18 months, and is in as good condition now as when first put under the engine.

Very respectfully yours,
GEO. S. GRIGGS,
Supt. of Machinery, Boston and Prov. R.R.

Fall River, February 2, 1850.

In answer to yours of the 20th ult. I would say that this company has for some 10 or 12 months past been using "Ray's India-rubber Springs." We have applied them to both passenger and freight cars with uniform success. They have invariably preserved their elasticity and consistency through all the extremes of weather; and we are now applying them whenever the steel spring fails. I am well satisfied that they are particularly adapted for railroad purposes.

Very respectfully yours,
GEO. HAYEN,
Supt. Fall River Railroad.

Jersey City, March 9, 1850.

This is to certify that the present form of Mr. F. M. Ray's India-rubber Car Spring I consider far superior to the form of Disk, having used both forms. I take pleasure in recommending these springs to all railroad companies.

DAVID H. BAKER,
Foreman of Car Shop of N.J. R.R. & Trans. Co.

Harlem R.R. Depot,
New York, March 7, 1850.

This is to certify that we have used Mr. F. M. Ray's India-rubber Springs for over eighteen months, and find them to be easy and durable, and recommend them to railroad companies as being superior to anything we have tried.

J. M. SMART,
Foreman at 42d St. Depot.

Old Colony Railroad Co.,
Boston, March 6, 1850.

EDWARD CRANE, Esq.,

President New England Car Co.,

Dear Sir: In compliance with your request I would state that the Old Colony Railroad Company have had in use upon their road, India-rubber Springs furnished by your company, for more than eighteen months past, during which time they have been extensively used under Passenger and Freight Cars, Locomotive Tenders, and for Drawer and Buffering Springs, with the most perfect success. The elasticity and consistency of the Rubber has never been unfavorably affected by either extremes of heat or cold—and from the experience which we have had in the use of Rubber Springs, I think them well adapted for railroad purposes—and therefore we have for some months past used Rubber almost exclusively, in all places where springs are required.

Respectfully yours, etc.,
JAS. H. MOORE,
Supt. O. C. Road.

Troy, February 27, 1850.

We have been using your India-rubber Car Springs for nearly two years—and we take pleasure in saying that in our opinion the rubber has to a certain extent already, and may eventually entirely supersede all other Springs for Railroad Car purposes. We now use it entirely for Draw Springs and Bumpers, considering it better and lighter than steel.

During our two years' experience in the use of it, we have not known any to lose their elasticity, or fail in any way; and we cheerfully recommend the rubber for railroad car springs. Very respectfully,
EATON, GILBERT & CO.

Passenger Car Linings.

THE Advertiser continues to make to order the Enamelled Car Linings which have been so highly approved the last three years, and are now exclusively used by all the Northern Railroads. No pains are spared to get out new styles, and adapt them to the tastes of every consumer.

Orders addressed to **CHARLES STODDER, No. 75 Kilby street, Boston,** will have prompt attention.
March 23, 1850.

India-rubber for Railroad Cos.

RUBBER SPRINGS—Bearing and Buffer—Fowler's Patent—Hose from 1 to 12 inches diameter. Suction Hose. Steam Packing—from 1-16 to 2 in. thick. Rubber and Gutta Percha Bands. These articles are all warranted to give satisfaction. Made under Tyer & Helm's patent, issued January, 1849.—No lead used in the composition. Will stand much higher heat than that called "Goodyear's" and is in all respects better than any in use. Proprietors of railroads do not be overcharged by pretenders.

HORACE H. DAY,

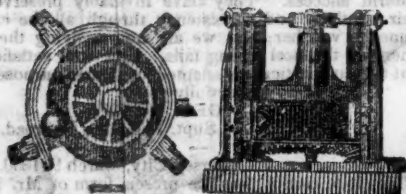
Warehouse 23 Courtlandt street,
New York, May 21, 1849.

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spike Machine, or a number of them, may be supplied by addressing
J. W. FLACK,
Troy, N. Y.
March 6, 1850.

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfer of the right to run said machine, or sell to those whomay be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phoenixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll sounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y. P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery for making Spikes, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

CHILLED RAILROAD WHEELS.—THE Undersigned are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

Brown's Old Established SCALE WARE HOUSE,

NO. 234 WATER ST., NEW YORK.

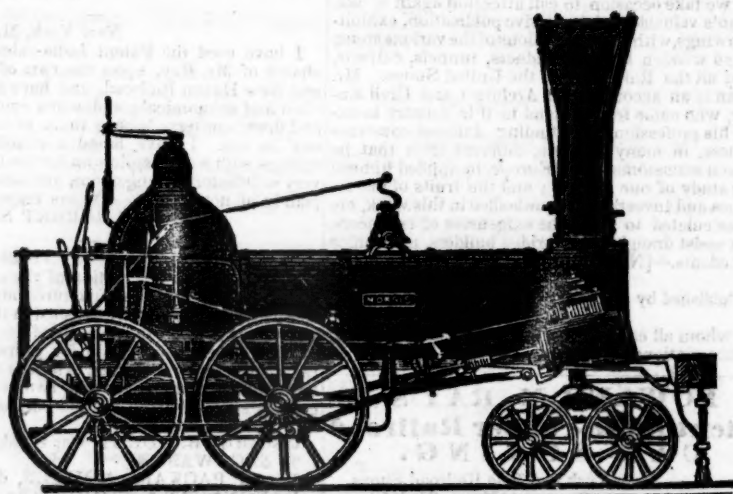
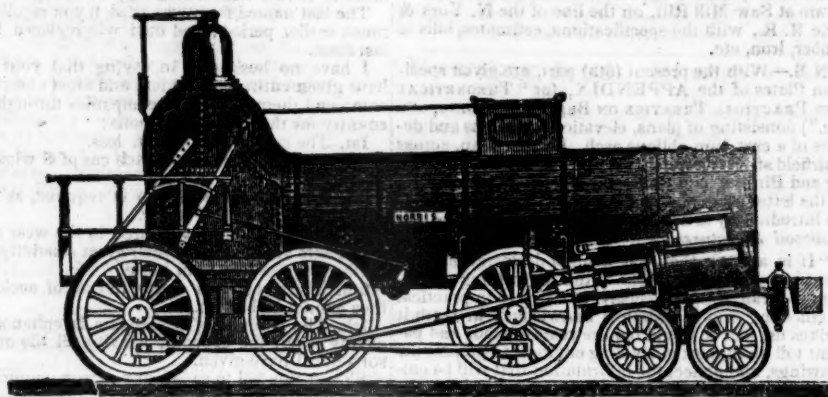
THE Subscriber, Practical Manufacturer of Scales of every description, respectfully asks the attention of Railroad Companies to his Improved Wrought Iron Railroad Track and Depot Scales which for strength, durability, accuracy, convenience in weighing, and beauty of workmanship, are not surpassed by any others in this country.

He is aware that this is rather a bold assertion for him to make, yet he can say with confidence that they have but to be tried to give them precedence over all others.

J. L. BROWN.

Bank Scales made to order, and all Scales of his make Warranted in every particular.

References given if required.

NORRIS' LOCOMOTIVE WORKS.
BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,

THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size. Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tyres are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS

PATENT MACHINE MADE HORSE-SHOES.

The Troy Iron and Nail Factory have always on hand a general assortment of Horse Shoes, made from Refined American Iron.

Four sizes being made, it will be well for those ordering to remember that the size of the shoe increases as the numbers—No. 1 being the smallest.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

Etna Safety Fuse.

THIS superior article for igniting the charge in wet or dry blasting, made with DUPONT'S best powder, is kept for sale at the office and depot of

REYNOLDS & BROTHER,

Sole Manufacturers,

No. 85 Liberty St.

NEW YORK.

And in the principal cities and towns in the U. States. The Premium of the AMERICAN INSTITUTE was awarded to the Etna Safety Fuse at the late Fair held in this city.

November 3, 1849.

1y

COLUMBUS, OHIO,
Railroad Car Manufactory.
RIDGWAYS & KIMBALL,

HAVE established at this central point, the manufacture of Passenger, Freight, Gravel and Hand Cars for Railroads, and assure all Western Railroad Companies that it will be their constant aim to procure the best materials and workmen, and to turn out the best kind of work at fair prices. Specimens may be seen on the Columbus and Xenia Railroad. The patronage of Railroad Companies is respectfully solicited.

1y8

To Inventors and Patentees.

OWEN G. WARREN, ARCHITECT, Has had many years' experience as Agent for obtaining Patents, both in this country and Europe, and will transact such business promptly and reasonably. Persons at a distance can have their business done by correspondence—without the necessity of visiting this city or Washington. Office No. 94 Merchants Exchange, Wall st., corner of Hanover st., up stairs.

1y3

Mr. Hale:—"The New England Car Co., having been engaged for the last six months in introducing the Vulcanized India-rubber Car Springs upon the different railroads in this and other states, and having in particular introduced it upon the Boston and Worcester railroad with perfect success, were much gratified to find, by your paper of this morning, that the article had given satisfaction to the president of that corporation, and the terms of just commendation in which you were pleased to speak of it. But their gratification was scarcely equalled by their surprise, when, or arriving at the close of your paragraph, they found the results of all their labors attributed to a foreign source, with which the New England Car Co. has no connection. The material used on the Boston and Worcester railroad, and all the other railroads in this country, where any preparation of India-rubber has been successfully applied, is entirely an American invention, patented in the year 1844 to Charles Good-year, of New Haven, Conn., and the application of it to this purpose and the form in which it is applied are the invention of F. M. Ray of New York. The only material now in use, and so far as has yet appeared, the only preparation of India rubber capable of answering the purpose, has been furnished under these patents by the New England Car Company, manufactured under the immediate inspection of their own agent. If any other should be produced, the right to use it would depend upon the question of its interference with Mr. Goodyear's patent. The New England Car Company have their place of business in this city at No. 99 State street, and are prepared to answer all orders for the Vulcanized India rubber Car Springs, of the same quality and of the same manufacture as those which they have already placed on your road, and most to the other roads terminating in this city."

And yet Mr. Knovitt is using these experiments made upon the Springs of the Car Company to induce the public to purchase his springs, and is attempting to impose upon them the belief that the springs used were furnished by him! We ask whether such a course is honorable, or entitles his statements to much consideration from the public.

The above Springs are for sale 98 Broadway, New York, and 99 State street, Boston.

EDWARD CRANE Agent, Boston.

F. M. RAY, Agent, New York.

Boston, May 8, 1849.

STABILITY—SECURITY—PERPETUITY. Mutual Life Insurance Co. of New York.

No. 35 WALL STREET.
A MILLION OF DOLLARS

Securely invested in Bonds and Mortgages on real estate in this city and Brooklyn, and stocks of the State and City of New York and United States Government.

The company declared a dividend of profits of fifty-two per cent. on all existing policies on the 31st of January, 1848.

All the Profits are Divided Among the Insured.

Persons may effect insurance on their own lives and the lives of others.

A married woman can insure the life of her husband, the benefits of which are secured by law for the exclusive use of herself or children.

Clergymen and all others dependent upon salaries or their daily earnings are specially invited to avail themselves of a resource whereby their surviving families may be secured from the evils of penury.

Pamphlets explanatory of the principles of Mutual Life Insurance, and illustrating its advantages, with forms of application, may be obtained at the office of the company, 35 Wall street, or of any of its agents.

TRUSTEES.

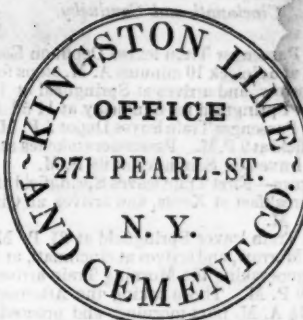
Jos. B. Collins,	Abraham Bininger,
Wm. J. Hyslop,	Alfred Edwards,
R. H. McCurdy,	Wm. Betts,
Fred. S. Winston,	Joseph Blunt,
C. W. Faber,	Isaac G. Pearson,
John P. Yelverton,	Henry Wells,
Theo. Sedgwick,	Wm. Moore,
Stacy B. Collins,	George R. Clark,
John H. Swift,	Jona. Miller,
John Wadsworth,	David A. Comstock,
S. M. Cornell,	Robert Schuyler,
Gouv. M. Wilkins,	James Chambers,
John V. L. Pruyn,	Joseph Tuckerman,
Jas. S. Wadsworth,	Moses H. Grinnell,
Charles Ely,	Wm. J. Banker,
John C. Cruger,	John M. Stuart,
Charles King,	Francis S. Lathrop,
Alfred Pell,	Nathaniel Hayden.

JOSEPH B. COLLINS, President.

ISAAC ABBATT, Secretary.

3m9

Hydraulic Cement.



HYDRAULIC CEMENT, OF BEST QUALITY, manufactured at their works, for sale in lots to suit purchasers.

Also, Ground Lime, a superior article for Builders. ISAAC FRYER, Sec'y.

January 19, 1850.

Engine and Car Works, PORTLAND, MAINE.

THE PORTLAND COMPANY, Incorporated August 8th, 1846, with a capital of \$250,000, have erected their extensive Works upon the deep water of Portland Harbor, and receive and transport, to and from their works direct, to and from vessels of any class.

They now manufacture to order, and deliver upon the Railroads running in each direction from the city, or on shipboard as wanted, Locomotive, Stationary, or Steam Boat Engines; Passenger, Mail, Freight, Earth and Hand Cars; Railway Frogs, Switches, Chairs and Castings; and every other description of Machinery.

HORACE FELTON,
Superintendent.

JAMES C. CHURCHILL,
General Agent and Clerk.

RAILROADS.

EASTERN RAILROAD.

SUMMER ARRANGEMENT.

On and after Monday, June 17th, 1850, trains will leave Boston daily (Sundays excepted):
For Lynn, 7 3/4, 11 a.m., 12 m., 2 1/2, 4 1/2, 5, 6, 7 p.m.
Salem, 7 3/4, 11 a.m., 12 m., 2 1/2, 3 1/2, 4 1/2, 6, 7 p.m.
Manchester and Gloucester, 9 1/2 a.m., 3, 6 p.m.
Marblehead, 7 3/4, 12 a.m., 2 1/2, 4 1/2, 6, 7 p.m.
Ipswich, 7 11, 12 a.m., 2 1/2, 4 1/2, 7 p.m.
Newburyport, 7 11, 12 a.m., 2 1/2, 4 1/2, 7 p.m.
Portsmouth, 7 11 a.m., 4 1/2 p.m.
Portland, Me., 7 11 a.m., 4 1/2 p.m.

And for Boston,
From Portland, 5 10 1/2 a.m., 5 p.m.
Portsmouth, 7 1/2 a.m., 1 7 1/2 p.m.
Newburyport, 6 1/2, 8 1/2, 11 1/2 a.m., 1 1/2, 5, 8 p.m.
Ipswich, 7 40, 8 35, 11 42 a.m., 2 20, 5 22, 8 1/2 p.m.
Gloucester, 7 1/2 a.m., 1 1/2, 8 p.m.
Manchester, 7 a.m., 2 p.m.,
Salem, 6 1/2, 7 1/2, 8 1/2, 9 1/2, 10 1/2 a.m., 12 1/2, 2 1/2, 3 1/2, 6 1/2, 9 1/2 p.m.
Lynn, 6 1/2, 7 1/2, 8 1/2, 9 1/2, 10 1/2 a.m., 12 1/2, 2 1/2, 3 1/2, 6 1/2, 9 1/2 p.m.

*Or on their arrival from the East.

Freight trains each way daily. Office 17 Merchants' Row, Boston.

JOHN KINSMAN, Superintendent.

ALBANY AND BUFFALO RAILROADS.

Four Trains daily, Sundays excepted, viz:
Leave Albany, 6 a.m., 9 a.m., 2 p.m., 7 p.m.
Reach Buffalo, 15 hours, 18 hours, 23 hours, 18 hours.
Arrive from Buffalo, 7 p.m., 2 1/2 a.m., 12 1/2 m., 3 1/2 p.m.

Passengers by the Express Train reach Buffalo from New York, and New York from Buffalo, in 24 hours. The Isaac Newton and Oregon connect at Albany with this Train. Baggage cars, with careful baggage masters, run through with all the trains.

For Schenectady, Saratoga Springs & Whitehall, Leave Albany at 7 a.m. and 2 p.m. For Schenectady only at 6, 7 and 9 a.m. and 12 1/2, 2 and 7 p.m. For Erie Canal packets at 7 a.m. and 7 p.m. By Plank Road from Schenectady to Saratoga at all hours by stages, etc.

The Eastern Trains leave Albany at 7 a.m. and 3 p.m. The wagons of the company take baggage free between railroads and steamboats at Albany.

E. FOSTER, Jr., Sec'y

Albany and Schenectady Railroad Co.

Albany, August, 1849.

BOSTON AND MAINE RAILROAD.

Summer Arrangement, 1850.
Outward Trains from Boston
For Portland at 7, 11, a.m. and 4 1/2 p.m.
For Great Falls at 7, 11, a.m., 4 1/2 p.m.
For Haverhill at 7, 9, 11 a.m., 2 1/2, 4 1/2, 6 1/2 p.m.
For Lawrence (South Side), 7, 11 a.m., 2 1/2, 4 1/2 p.m.
" (North ") 7 1/2, 9, a.m. 12 m., 5, 6 1/2 p.m.

For Reading 7, 9, 11 a.m. 12 m. 2 1/2, 4 1/2, 5, 6 1/2, 7 1/2, 9 1/2 p.m.
The Station in Boston is on Haymarket Square.
THOS. S. WILLIAMS, Super't.

July 1, 1850.

NEW YORK AND HARLEM RAILROAD. NEW ARRANGEMENT.

On and after Wednesday, October 17th, 1849, the Cars will run as follows, (Sundays excepted) until further notice:

Trains will leave the City Hall, New York, for—
Harlem and Morrisania at 6 1/2, 8, 10, 11, 12 a.m., 2, 3 1/2, 4, 5, 6 1/2 p.m.

New Village, at 8 1/2, 10, 12 a.m., 3 1/2, 5, 6 1/2 p.m.
Fordham and Williams' Bridge, at 8 1/2, 10, 12 a.m., 2 1/2, 3 1/2, 5, 6 1/2 p.m.

Hunt's Bridge, Underhill's and Hart's Corners, at 8 1/2, 10 a.m., 3 1/2, 5 p.m.

Tuckahoe and White Plains, at 8 1/2, 10 a.m., 2 1/2, 3 1/2, 5 p.m.

Pleasantville, New Castle, Bedford, Mechanicsville, Purdy's, Croton Falls, and intermediate stations, on signal, 8 1/2 a.m., 2 1/2, 3 1/2 p.m.

Brewster's, Towner's, Patterson, Paulding's, South Dover, Dover Furnace, and Dover Plains, 8 1/2 a.m., 2 1/2 p.m.

NOTICE—Passengers are reminded of the great danger of standing upon the platform of the cars, and hereby notified that the practice is contrary to the rules of the Company, and that they do not admit any responsibility for injury sustained by any passenger upon the platforms, in case of accident.

Returning to New York will leave

Harlem and Morrisania at 6 08, 7 1/2, 8 37, 9, 10 6, 12 a.m., 1 43, 3 07, 3 1/2, 5, 5 47 p.m.

New Village, at 5 58, 8 27, 9 56 a.m., 1 33, 2 57, 5 36 p.m.

Fordham and William's Bridge at 5 1/2, 8 14, 9 43, 10 57 a.m., 1 20, 2 44, 5 24 p.m.

Hunt's Bridge at 8 04, 9 33 a.m., 2 34, 5 16 p.m. On signal.

Underhill's, at 7 56, 9 23 a.m., 2 26, 5 10 p.m. On signal.

Tuckahoe at 7 53, 9 18, 10 40 a.m., 2 23, 5 08 p.m.

Hart's Corners at 7 38, 9 03 a.m., 2 08, 4 54 p.m.—On signal.

White Plains at 7 1/2, 8 55, 10 20 a.m., 2, 4 47 p.m.

Davis' Brook at 8 40, 10 11 a.m., On signal. 4 39 p.m. On signal.

Unionville, 8 27, 10 11 a.m. On signal. 4 29 p.m.—On signal.

Pleasantville at 8 20, 9 56 a.m., 4 24 p.m.

Champana, at 8 10, 9 50 a.m. On signal. 4 18 p.m. On signal.

New Castle, at 7 56, 9 38 a.m., 4 07 p.m.

Bedford at 7 46, 9 32 a.m., 4 02 p.m.

Mechanicsville at 7 36, 9 22 a.m., 3 52 p.m.

Golden's Bridge, 7 28, 9 17 a.m. On signal. 3 47 p.m. On signal.

Purdy's at 7 20, 9 09 a.m., 3 39 p.m.

Croton Falls, at 7 1/2, 9 04 a.m., 3 34 p.m.

Brewster's, at 8 50 a.m., 3 20 p.m.

Towner's, at 8 35 a.m., 3 05 p.m.

Patterson, at 8 27 a.m., 2 57 p.m.

Paulding's, at 8 17 a.m., 2 47 p.m.

South Dover, 8 02 a.m., 2 32 p.m.

Dover Furnace, 7 55 a.m., 2 25 p.m.

Dover Plains, at 7 45 a.m., 2 15 p.m.

The trains for Harlem and Morrisania leaving City Hall at 6 1/2, 8, 10, 11, 12, 2, 4 and 6 1/2, returning from Morrisania and Harlem at 6 08, 7 1/2, 9, 12, 1 43, 3 07, 3 1/2 and 5 o'clock, will land and receive passengers at 27th 42d, 51st, 61st, 79th, 86th, 109th, 115th, 125th and 132d streets.

The Dover Plains train from New York at 2 1/2 p.m., returning leaving Dover Plains at 7 1/2 a.m., will not stop between White Plains and New York, (except at Tuckahoe, Williams' Bridge and Fordham), unless to leave passengers coming from above Croton Falls.

A car will precede each train ten minutes to take up passengers in the city. The last car will not stop, except at Broome st. and 27th street.

Freight Trains leave New York at 1 o'clock p.m.—Returning, leaves Dover Plains at 12 o'clock m.

For Sunday Arrangements, see hand bills.
M. SLOAT, Sup't.

FAIRBANKS' RAILROAD SCALES.—THE subscribers are prepared to construct at short notice, *Railroad and Depot Scales*, of any desired length and capacity. Their long experience as manufacturers—their improvements in the construction of the various modifications, having reference to strength, durability, retention of adjustment, accuracy of weight and dispatch in weighing—and the long and severe tests to which their scales have been subjected—combine to ensure for these scales the universal confidence of the public.

No other scales are so extensively used upon railroads, either in the United States or Great Britain; and the managers refer with confidence to the following in the United States.

Eastern Railroad.	Boston & Maine Railroad.
Providence Railroad.	Providence and Wor. Road.
Western Railroad.	Concord Railroad.
Old Colony Railroad.	Fitchburg Railroad.
Schenectady Railroad.	Syracuse and Utica Road.
Balt. and Ohio Railroad.	Baltimore and Susq. Road.
Phila. & Reading Road.	Schuylkill Valley Road.
Central (Ga.) Railroad.	Macon and Western Road.
	New York and Erie Railroad.

And other principal Railroads in the Western, Middle and Southern States.

E. & T. FAIRBANKS & CO.

St. Johnsbury, Vt.

Agents, } FAIRBANKS & Co., 89 Water St., N. York.
 } A. B. NORRIS, 196 Market St. Philadelphia.
 April 22, 1849. ly*17

NOTICE TO

Superintendents of Railroads.

TYLER'S PATENT SAFETY SWITCH.—The undersigned would respectfully call their attention to his Patent Safety Switch, which from long trial and late severe tests has proved itself perfectly reliable for the purpose for which it was intended. It is designed to prevent the train from running off when the switch is set to the wrong track by design or accident. The single rail or gate switch is established as the best and safest switch for the ordinary purpose of shifting cars from one track to another, but it is liable to the serious evil of having one track open or broken when connected with the other. My improvement entirely removes this evil, and while it accomplishes this important office, leaves the switch in its original simplicity and perfection of a plain unbroken rail, connecting one track with the other ready for use.

The following decision of the Commissioner of Patents is respectfully submitted to Railroad Engineers, Superintendents, and all others interested in the subject.

P. B. TYLER.

(COPY.)

UNITED STATES PATENT OFFICE,

Washington City, D.C., April 28th, 1846.

Sir: You are hereby informed that in the case of the interference between your claims and those of Gustavus A. Nicolls, for improvements in safety switches—upon which a hearing was appointed to take place on the 3d Monday in March, 1846, the question of priority of invention has been decided in your favor. Inclosed is a copy of the decision. The testimony in the case is now open to the inspection of those concerned.

Yours respectfully, EDMUND BURKE,
 Commissioner of Patents.

To Philos B. Tyler.

Any further information may be obtained by addressing P. B. TYLER, Springfield, Mass., or JOHN PENDLETON, Agent, 149 Hudson St., New York.

**NORRIS' LOCOMOTIVE WORKS,
 SCHENECTADY, N. Y.**

THESE Works are in full operation in Manufacturing to order, Locomotive Steam Engines & Tenders, of the best principle and construction of material, using wrought iron heavy frames with pedestals welded thereto, and all parts of the engine made of the best wrought iron, except cylinders, pumps and boxes—obtaining greater durability, and carrying less weight over the road, than engines constructed of cast iron.

Wrought Iron Tires made any required size, and Tire Bars bent and welded with dispatch.
 Chilled Wheels for Cars, Trucks and Tenders, made from the toughest iron.

Driving and Tender and Car Wheels fitted to Axles with Brass Boxes and Springs, and Railroad Machinery generally. Manufactured and for sale by
 April 11, 1849. E. S. NORRIS.

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by **POWERS & WRIGHTMAN**, manufacturing Chemists, Philadelphia.
 Jan. 20, 1849.

CENTRAL RAILROAD FROM SAVANNAH TO MACON, (Ga.) 190 1/2 miles.

Passenger Trains leave Savannah and Macon daily at 7 a.m.

Passenger trains arrive daily at Savannah, 6 15 p.m.
 " " " Macon, 6 45 p.m.

This road, in connection with the Macon and Western road from Macon to Atlanta, and the Western and Atlantic road from Atlanta to Dalton, now forms a continuous line of 391 1/2 miles in length* from Savannah to Dalton, Murray county, Ga. and with the Memphis Branch railroad, and Stages connect with the following places:

Tickets from Savannah to Macon,	\$5 75
" " " Atlanta,	9 50
" " " Augusta,	6 50
" " " Columbus,	15 00
" " " Opelika,†	17 00
" " " Jacksonville, Ala.,	20 00
" " " Talladega,	
" " " Huntsville } Ala.,	22 00
" " " Decatur,	
" " " Tusculum, Ala.,	22 50
" " " Tusculum, Ala.,	
" " " Columbus, Miss.,	28 00
" " " Aberdeen, "	
" " " Holly Springs,	
" " " Nashville, Tenn.,	
" " " Murfreesboro',	25 00
" " " Columbia, do.,	
" " " Memphis, do.,	30 00

An extra Passenger Train leaves Savannah on Saturdays, after the arrival of the Steam-ships from New York, for Macon, and connects with the Macon and Western railroad; and on Tuesdays, after the arrival of the Macon and Western cars, an extra Passenger Train leaves Macon to connect with the Steam ships for New York.

Stages for Tallahassee and intermediate places connect with the road at Macon, Mondays, Wednesdays, and Fridays, and with Milledgeville at Gordon daily.

Passengers for Montgomery, Mobile and New Orleans take stage for Opelika from Barnesville through Columbus, a distance of 97 miles, or from Griffin thro' West Point, a distance of 93 miles.

* The Western and Atlantic railroad will soon be completed between Dalton and Chattanooga, a distance of 423 1/2 miles from Savannah, of which due notice will be given.

† Head of the West Point and Montgomery railroad, on which the fare to Montgomery is about \$2.

RATES OF FREIGHT FOR MERCHANDISE GENERALLY, FROM SAVANNAH TO MACON.

Measurement Goods.—Boxes of hats, bonnets, furniture, shoes, saddlery, dry-goods, and other measurement goods, per cubic foot - 13 cents.
 Crockery Ware, in crates, boxes or hhds, per cubic foot. - 10 "
 Goods by Weight, 1st class.—Boxes of glass, paints, drugs & confectionary, per 100 lbs., 50 "
 2d class—Sugar, coffee, rope, butter, cheese, lard, tobacco, leather, hides, copper, sheet and hoop iron, tin, hard and hollow ware, rice, boxes soap and candles, bagging, and other heavy articles not enumerated below, per 100 lbs., 45 "
 3d class—Flour, bacon, liquors, pork, beef, fish, tallow and beeswax, per 100 lbs., 40 "
 4th class—Mill-gearing, pig and bar iron, grind and millstones, nails, spikes and coal, 100 lb. 30 "
 Barrels of beets, bread, crackers, potatoes, ice, fruit, oysters, onions, and all light bbls, each, 75 "
 Oil and molasses per hhd., (smaller casks in proportion) - \$6 00 "
 Salt per sack not exceeding 4 bushels, - 50 "
 Goods consigned to Thos. S. Wayne, Forwarding Agent, Savannah, will be forwarded free of commission. WM. M. WADLEY, Supt.
 Savannah, Ga., February 24, 1850.

ENGINEERS' AND SURVEYERS' INSTRUMENTS MADE BY

EDMUND DRAPER,

Surviving partner of
STANCLIFFE & DRAPER.



No 23 Pear street,
 near Third,

below Walnut,
 Philadelphia.

GEORGIA RAILROAD. FROM AUGUSTA TO ATLANTA—171 MILES.

AND WESTERN AND ATLANTIC RAILROAD, FROM ATLANTA TO DALTON, 100 MILES.

This Road, in connection with the South Carolina Railroad, and Western and Atlantic Railroad, now forms a continuous line, 408 miles in length, from Charleston to Dalton (Cross Plains) in Murray county, Ga. 32 miles from Chattanooga, Tenn.

RATES OF FREIGHT.

		Between Augusta and Dalton, 271 miles.	Between Charleston and Dalton, 408 miles.
1st class	Boxes of Hats, Bonnets, and Furniture, per cubic foot	\$0 18	\$0 28
2d class	Boxes and Bales of Dry Goods, Saddlery, Glass, Paints, Drugs, and Confectionary, per 100 lbs.	1 00	1 50
3d class	Sugar, Coffee, Liquor, Bagging, Rope, Cotton, Yarns, Tobacco, Leather, Hides, Copper, Tin, Feathers, Sheet Iron, Hollow ware, Castings, Crockery, etc.	0 60	0 85
4th class	Flour Rice, Bacon, Pork, Beef, Fish, Lard, Tallow, Beeswax, Bar Iron, Ginseng, Mill Gearing, Pig Iron, and Grindstones, etc.	0 40	0 65
	Cotton, per 100 lbs.	0 45	0 70
	Molasses per hogshead	8 50	13 50
	" " barrel	2 50	4 25
	Salt per bushel	0 18	
	Salt per Liverpool sack	0 65	
	Ploughs, Corn Shellers, Cultivators, Straw Cutters, Wheelbarrows -	0 75	1 50

German or other emigrants, in lots of 20 or more, will be carried over the above roads at 2 cents per mile.

Goods consigned to S. C. Railroad Company will be forwarded free of commissions. Freight payable at Dalton.

F. C. ARMS,

44*ly

Sup't of Transportation.

CAR MANUFACTORY CINCINNATI, OHIO.



KECK & DAVENPORT would respectfully call the attention of Railroad Companies in the West and South to their establishment at Cincinnati. Their facilities for manufacturing are extensive, and the means of transportation to different points speedy and economical. They are prepared to execute to order, on short notice, Eight-Wheeled Passenger Cars of the most superior description. Open and Covered Freight Cars, Four or Eight-Wheel Crank and Lever Hand Cars, Trucks, Wheels and Axles, and Railroad Work generally.

Cincinnati, Ohio, Oct. 2, 1848.

NICOLL'S PATENT SAFETY SWITCH FOR Railroad Turnouts. This invention for some time in successful operation on one of the principal railroads in the country, effectually prevents engines and their trains from running off the track at a switch, left wrong by accident or design. It acts independently of the main track rails; being laid down or removed without cutting or displacing them.

It is never touched by passing trains, except when in use, preventing their running off the track. It is simple in its construction and operation, requiring only two castings and two rails; the latter, even if much worn or used, not objectionable.

Working models of the Safety Switch may be seen at Messrs. Davenport, Bridges & Kirk's Cambridge Port, Mass., and at the office of the Railroad Journal, New York.

Plans, Specifications, and all information obtained, on application to the Subscriber, Inventor and Patentee.

G. A. NICOLLS,
 Reading, Pa.

FOWLER M. RAY'S METALLIC INDIA RUBBER CAR SPRINGS.

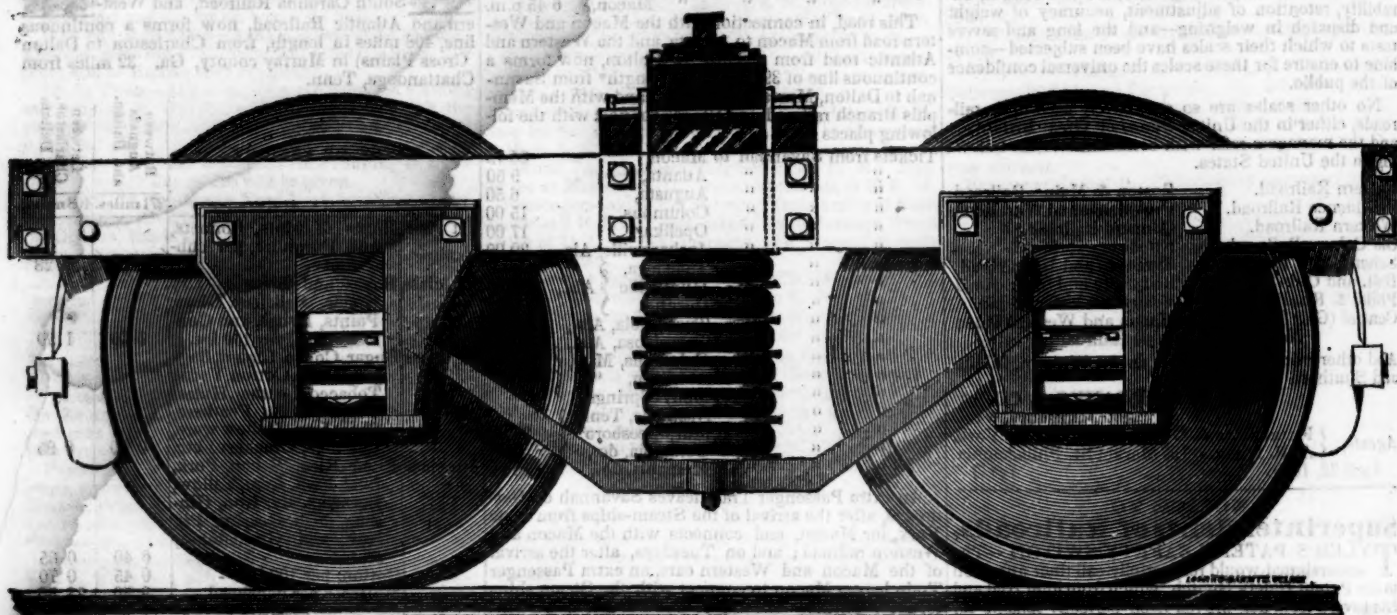


Fig. 1.

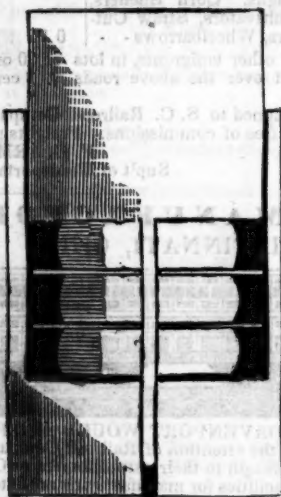


Fig. 2.

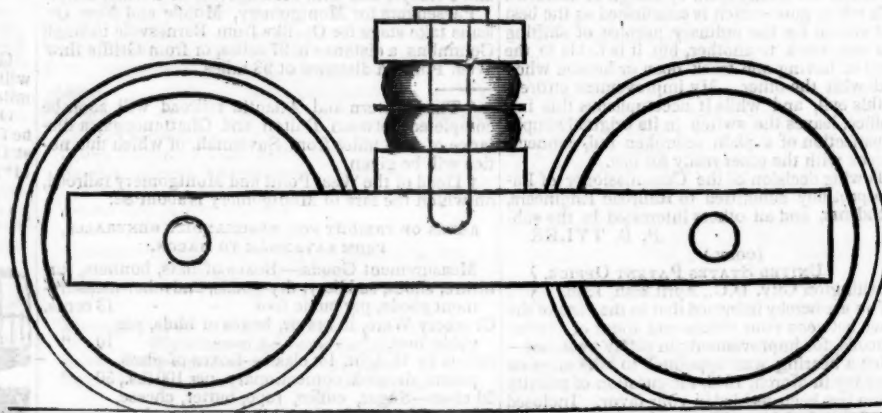


Fig. 3.

So much has been published for the purpose of misleading the public in regard to the inventorship of the India-rubber Railroad Spring, patented in the United States by Mr. W. C. Fuller, that the New England Car Company, proprietors of this invention, have deemed it proper, for the information of Railroad Companies, Car Builders and the public generally, to lay before them the facts upon which they found their claim to this invention, and to a Patent therefor.

Cut No. 1. Represents a cross section of the first model made by Mr. Tucker, under the direction of Mr. Ray, in the summer of 1844, and to which Mr. Tucker, Mr. Bradley and Mr. Bannister testify as being the model marked "B."

Cut No. 2. Represents the model made in 1845, to which Mr. Osgood Bradley and Gen. Thos. W. Harvey have testified.

Cut No. 3. Represents a rough sketch made by Mr. Ray in 1844, which he gave to a man about departing for England to take out some patents, who promised to write to Ray after his arrival in that country—which promise he has probably forgotten.

Mr. W. C. Fuller, of England, patented the above Spring in that country on the 23d October, 1845. He filed his enrollment April 23d, 1846, and on the 22d October, 1846, he took out a patent in the United States under the title, "For Improvement in Railway Carriages," when the improvement consisted in the spring, and not in the carriage.

The reader will perceive by the annexed testimony, that the India-rubber Railroad Car Spring was invented by Mr. Ray about two years previous to the date of Mr. Fuller's enrollment.

The Depositions are omitted for want of room, but will be published in full in the course of a few weeks.

AMERICAN RAILROAD JOURNAL
PUBLISHED BY J. H. SCHULTZ & CO.
ROOM 12, THIRD FLOOR,
No. 136 Nassau Street,
NEW YORK.

TERMS. — Five Dollars a year, in advance.

RATES OF ADVERTISING.

One page per annum.....	\$200 00
One column ".....	75 00
One square ".....	20 00
One page per month.....	25 00
One column ".....	10 00
One square ".....	3 00
One page, single insertion.....	10 00
One column ".....	4 00
One square ".....	1 50
Professional Cards per annum.....	5 00

LETTERS and COMMUNICATIONS to this Journal may be directed to the Editor,
HENRY V. POOR,
136 NASSAU STREET.